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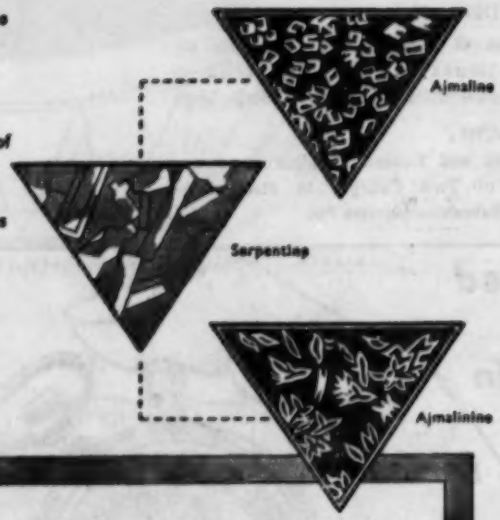

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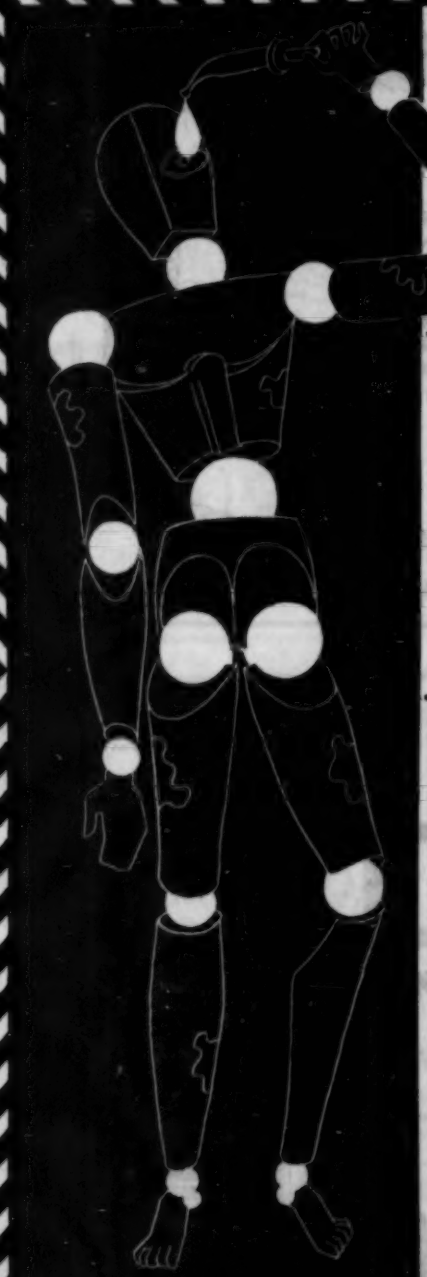

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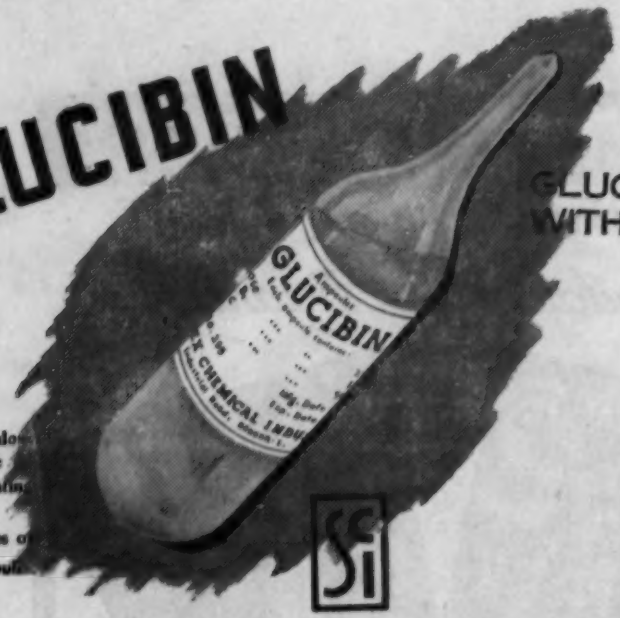

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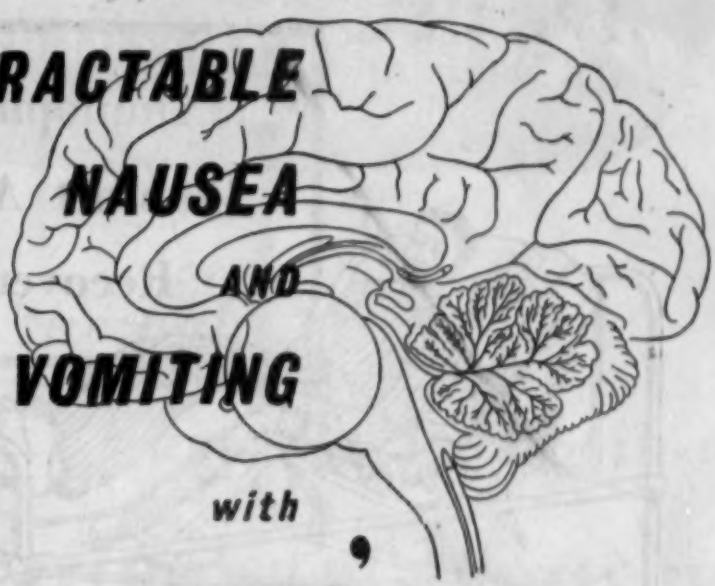

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ORIGINAL ARTICLES

ORCHITIS IN BRUCELLOSIS

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Orchitis during or following a bout of fever occurs in brucellosis, but this fact is seldom recognised. This paper with a report of seven such cases is written with a view to highlight this symptom of brucellosis.

CASE REPORTS

Case 1—K. S., a 30 year old butcher presented himself in the outpatient's with the complaint of pain and swelling of the right testicle. He was admitted as a case of orchitis. Since he complained of joint pains also he was clinically diagnosed to be suffering from gonococcal orchitis, although he denied any history of gonorrhoea and there was no discharge from the urethra. Since he was ambulant his fever was not taken notice of, he was treated with penicillin with no relief and was discharged from the hospital. He was later on re-examined. This time the history was reviewed more carefully. He stated that he had been getting fever for the last six months and his right testicle was swollen for two months. He had pain in the calves and in the shoulders, wrists and fingers. He had slight cough and had lost considerable weight. His spleen was enlarged three fingers below the costal margin but was soft. The liver was also enlarged three fingers below the costal margin. He had a temperature of 101°F and a pulse rate of 92 per minute. W.B.C.—4,100 c.mm. with polymorphs 40 per cent, lymphocytes 56 per cent and monocytes and eosinophils 2 per cent each. Because of his profession and these findings brucellosis was suspected and an agglutination test for brucellosis was performed. This was positive up to titre of 1/640.

Case 2—S., 28 years, had orchitis of a month's duration which was diagnosed to be of gonococcal origin. He also complained of joint pains which perhaps seemed to lend further support to this diagnosis. He was given several injections of penicillin without any relief. Three months before this attack of orchitis he had bouts of fever lasting 10-15 days with intermission for 7-10 days. He also had pain in the ankle, knee, wrist, finger, elbow and shoulder joints and in different parts of the body. He was given pyrazolidine compound injections because the pain was attributed to rheumatism. Later on he was given 12 injections of streptomycin (12 g.) and 8 capsules of aureomycin which did him some good and his orchitis gradually subsided.

Agglutination test for Brucella was positive even after 9 months up to a dilution of 1/320.

Case 3—H. L., a 40 year old village shopkeeper had one month's continuous fever but he was ambulant. The fever was, however, clinically diagnosed as low grade typhoid fever and was followed by pain and swelling of the right testicle. However, the attending doctor failed to connect the orchitis with fever. The orchitis became all right after a month but six months later he was admitted to the hospital with the complaint of pain behind both the shoulders, insomnia and sciatica-like pain in the right lower extremity. He was given injections of procaine-butylaminobenzoate in the sciatic region of the buttock with absolutely no relief. *Brucella melitensis* was isolated from blood of this patient six months after the first attack of fever. The patient was running a temperature of 99°F. W.B.C.—6,000 c.mm. with polymorphs 46 per cent, lymphocyts 49 per cent and eosinophils 5 per cent. Agglutination test for Brucella was positive up to 1/320 even six months after he had the fever.

Case 4—R. C., a 45 year old peon in an office, had bilateral orchitis. The history was that previous to admission in the hospital he had three months' irregular

fever with body pains, pains in the right knee, loss of appetite and loss of body weight. He used to be confined to bed during the febrile episodes. The patient was in the habit of drinking raw milk. His fever always came with chill so he was treated for 2 months as a case of malaria. Three months after the onset of his illness when he was admitted to hospital he had a 3 fingers enlarged liver and one finger enlarged spleen and he looked very emaciated. W.B.C.—6,150 c.mm. with polymorphs 64 per cent, lymphocytes 35 per cent and eosinophils 1 per cent. His serum for Widal test was negative, and it was positive 1 in 160, for Brucella.

Case 5—P.P.S., a twenty-one year old student complained that 3 months back he had continuous fever which came down after 16 days. This was diagnosed as malaria. He was apyrexial for 10 days when he had fever again. The temperature ranged between 100° and 103°F, and was continuous for a month. In the last week of this febrile bout he noticed that his left testicle was inflamed and painful. He was put on chloramphenicol, and after 48 hours his temperature became normal, but a week after discontinuing it, he had pain in the elbow, ribs and the right hip joint along with bouts of fever for 20 days. He had also orchitis. He was confined to bed and became very weak. His spleen and liver were enlarged 2 fingers below the costal margin. W.B.C.—8,150 c.mm. with polymorphs 27 per cent and lymphocytes 73 per cent. His agglutination test for Brucella was positive in 1 in 640. *Brucella melitensis* was recovered from his blood.

Case 6—P.S., a 21 year old clerk, had fever for last 3 months which came in waves. He had joint pains, body pains and he complained of drenching sweats. Two months after he had started getting fever he had orchitis. He was in the habit of taking raw milk of goat, cows and buffaloes. At the time of admission to the hospital his liver and spleen were enlarged. W.B.C.—8,350 c.mm. with polymorphs 64 per cent, lymphocytes 35 per cent and eosinophils 1 per cent. Serum was positive 1 in 320 for Brucella.

Case 7—K.C., a 24 year old mechanic, was admitted for corneal ulceration and his blood was examined for Kahn test. Since all Kahn sera were also being examined for brucellosis this case was accidentally detected. It was positive for Brucella in 1 in 320. He stated that he had a typhoid-like fever 3 months before. After the fever he had orchitis. Thereafter he had sciatica of the left side, which lasted for 3 weeks. This was followed by slight rheumatic like pains in the left wrist and heel. On examination a firm spleen three fingers below the costal margin was found. There was also a history of drinking raw cow's milk.

Technique of the Agglutination Test

Serial dilutions of the serum from 1 in 5 to 1 in 640 were made in 0·5 per cent carbolic in normal saline. 0·5 c.c. of such diluted serum was placed in Kahn tubes in a rack. To these, 0·5 c.c. of Weybridge antigen (*Brucella abortus* suspension) was added. The rack was incubated at 37°C and the result was read at the end of 24 hours and again at 48 hours. The last tube showing 50 per cent agglutination was taken as the end point. With the above method 50 per cent agglutination in 1 in 40 to 1 in 48 are the minimum acceptable diagnostic titre with the antigen employed (First report of Expert Panel on Brucellosis).

Discussion

In Case 1 the diagnosis of brucellosis with orchitis would not have been difficult if the profession of the patient had not been kept in mind. The patient was a butcher. Brucellosis is seldom suspected even in the people who are exposed to its hazards. His joint pains instead of leading one to think of brucellosis misled him to believe that they were complications of gonorrhoea. The diagnosis of gonococcal orchitis was not tenable in the event of a negative history, absence of urethral discharge and the presence of continued fever of six months' duration which had been disregarded because the patient was ambulant. Brucellosis is often missed like this. In Case 2 a previous history of waves of fever was not taken and orchitis in a youngman with arthralgia was at first attributed to gonorrhoea and then to rheumatism. He too had no urethritis and he was unsuccessfully treated for gonorrhoea and rheumatism. This case shows how brucellosis can be mistaken for rheumatism. In Case 3 the doctor failed to connect fever and orchitis as a complication of brucellosis. This case later had rheumatic like pains and sciatica which also may occur as complications of brucellosis. His one month continuous fever was diagnosed to be typhoid clinically. It incidentally shows how brucellosis may be missed if reliance is placed on clinical diagnosis alone. Case 4 was missed for malaria in the out-patients and was given quinine for a long time. It was only when there was relapse and he was admitted to the hospital and serological tests were done that he was found to be suffering from brucellosis. Case 5 was first missed for malaria and then typhoid. Orchitis was disregarded and not taken serious notice of. In Case 6 although the patient had an undulant fever, the orchitis which occurs as a complication was missed at first, but was later on detected when serological test for brucellosis was found positive. In the last case the fever was missed for typhoid and there was no explanation for orchitis.

Manson-Bahr (1950) placed the incidence of orchitis in brucellosis at 4 per cent. Out of 40 of the male patients suffering from brucellosis, there

was orchitis in 7 (17·5 per cent), ten patients were not specifically questioned about orchitis. Orchitis occurs during or a month or two after an attack of undulant fever or during a relapse. Champneys (1950) described 81 cases of brucellosis in England but did not mention orchitis as a sign or as a complication. In England most of the infection is due to *Brucella abortus*. Perhaps orchitis occurs more often in infection with *Brucella melitensis*. Harris (1950) stated that Wainwright estimated orchitis in 20 per cent of melitensis and 4 per cent of abortus infections. From Cases 3 and 5 *Brucella melitensis* was isolated. The great number of cases of orchitis points to the probability that in the Punjab most of the infection is due to *Brucella melitensis*.

There is, however, great need of cultural studies in cases of brucellosis to know what type of infection predominates so that effective preventive steps may be taken.

Summary

Seven cases of brucellosis in which orchitis occurred as a symptom or as a complication are described.

Orchitis occurring during and after a fever should arouse a suspicion of brucellosis in a patient.

Orchitis occurred in 17·5 per cent of the cases studied.

The greater incidence of orchitis points to the probability that the infection in Punjab is perhaps due to *Brucella melitensis*.

Acknowledgment

My thanks are due to the Director of Health Services, Punjab, for kindly allowing me to publish this paper and to Dr. A. W. Stableforth, Director Veterinary Laboratory New Haw, Weybridge Surrey, England, who very kindly supplied the *Brucella abortus* concentrate used to test the sera of patients.

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TREATMENT OF TROPICAL EOSINOPHILIA BY INHALATION OF AN AEROSOL OF DIETHYLAMINE ACETARSOL

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Weingarten (1943) demonstrated the curative effect of organic arsenical compounds in tropical eosinophilia. Since then the striking effect of organic arsenicals in this condition has been confirmed generally, and it is now the usual practice to treat the disease with 6 to 8 injections of a compound such as diethylamine acetarsol administered intramuscularly at not more than bi-weekly intervals. Arsenical compounds have also been used by other routes, viz., (1) Intravenously as neo-arsphenamine. (2) Orally as acetarsol or carbarsonum. Carter and D'Abrera (1946) prefer the oral route of administration while Ball (1950) considers parenteral administration to be superior. But according to the latter worker, only in 50 per cent of the cases does arsenical therapy cure the condition completely, while in the rest only partial relief is obtained and some cases may be completely resistant. Besides, parenteral treatment is prolonged (minimum duration being 3 to 4 weeks) and toxic effects of arsenic such as neuritis and ocular affection are sometimes encountered.

It appeared to the writer that inhalation of an aerosol of an arsenical such as diethylamine acetarsol may have some value in this disease, the manifestations of which are predominantly respiratory. The drug would reach the respiratory tract directly and act on the causative organism, the nature of which still remains unknown but has been postulated variously to be a mite (Carter, Wedd and D'Abrera, 1944) or a virus (Viswanathan and Natarajan, 1945) or other unknown agent. Other possible advantages of this route that were considered were: (1) avoidance of injections and self-administration by the patient; (2) frequent administration of the drug and hence shorter course of treatment; (3) less likelihood of systemic toxic effects; and (4) alternative route in patients intolerant to the drug given parenterally.

With the object of evaluating this mode of therapy in tropical eosinophilia, 10 consecutive cases admitted in the hospital with this disease were treated by inhalation of acetarsol and the results are reported in this paper.

Material and Methods

The patients were all adult males admitted in this hospital between April and September 1954

and were kept under observation throughout the period of treatment. Diagnosis was based on a typical history of cough, wheezing, sometimes fever and other ancillary symptoms ; presence of rhonchi in both lungs in most cases, and a raised eosinophilic count in the blood picture sufficient to elevate the total white cell count in all the cases. Radiological examination was not considered essential for diagnosis. Careful clinical examination for allergy and repeated stool examinations for helminths were done in all cases, to eliminate other common causes of eosinophilia. Blood examination was frequently repeated during treatment to assess progress of the case. Improvement or cure of the condition was judged from the physical well-being of the patient and principally from the lowering of the eosinophilic count. Cases which did not show immediate cure were followed up for periods varying from 1 month to 6 months.

The technique adopted for inhalation therapy was as follows :

One ampoule of 3 c.c. of diethylamine acetarsol (23·6 per cent w/v for adults, each c.c. contains 0·05 g. arsenic) was introduced in the glass container of a de Vilbiss atomiser. The material was diluted with 30 c.c. of distilled water in some but in the majority no diluent was added. The patients were personally instructed on the use of the atomiser and the treatment was supervised by the ward sister each time. After introducing the nozzle into the mouth the patient inhaled deeply each time a spray was emitted by pressing the bulb. After taking a few such inhalations the patient rested for a few minutes and then again repeated the process till the whole amount in the bottle was utilised. This was usually completed within an hour or so.

The main clinical features of the ten cases and the effects of treatment are summarised in Table 1.

Discussion

As stated the criteria on which clinical improvement or cure was judged in the cases were three, viz., (1) amelioration of symptoms, (2) disappearance of physical signs, i.e., rhonchi in the lungs and (3) lowering of the eosinophilic count. Judged by these standards the effect of aerosol therapy in our series of 10 cases was as follows :

Amelioration of symptoms—One was symptom-free before commencement of the therapy. Of the remaining 9 cases all but one admitted complete relief from symptoms with the inhalations. Symptomatic relief was felt after 4 to 8 days of the therapy. This effect was noticed even in those cases where rhonchi persisted in the lungs or where the eosinophilic count was not lowered.

Disappearance of rhonchi in the lungs—Side by side with relief of symptoms, an improvement was noticed in the condition of the lungs and rhonchi were found less prominent in all cases. However, in two cases a few rhonchi still persisted after the course of inhalation therapy and there was no alteration in the physical signs in one.

Lowering of eosinophilic count—The absolute eosinophilic count was calculated from the W.B.C. count and eosinophil percentage, prior to commencement of the therapy and on completion.

In less than half of the inhalation cases there was satisfactory lowering of the eosinophil count (i.e. less than 50 per cent of the initial count). In two of the cases there was an actual increase in the absolute eosinophil count after aerosol therapy.

In no case after inhalation therapy did the eosinophilic count reach the normal figure which in Indians is estimated by Acton and Dharmendra (1933) and Napier and Dasgupta (1935) to be 500 per c.mm.

Carter and D'Arbrera (1946) noted a gradual but steady reduction in eosinophil count after cessation of arsenical therapy (by the oral route in their cases) and this effect continued upto as long as 7 months. The lowering of the eosinophilic count seen in some cases subsequently treated by acetarsol injections might be due to the delayed effect of the inhaled arsenical, and such a lowering was actually noted in the eosinophilic count of the 4 cases who did not receive a subsequent injection course (Table 1).

Duration of inhalation therapy varied from 12 to 18 days when given on alternate days and from 10 to 20 days when given daily in the later cases in the series. This compares favourably with 3 to 4 weeks required for injection treatment. There appears to be not much difference between daily and alternate day inhalations, nor between inhalation of diluted and undiluted material. If undiluted, the amount of material to be inhaled is smaller and therefore easier for the patient. Since in all cases where inhalation therapy was effective symptoms were relieved by the 8th inhalation, the best plan would appear to be a course of daily inhalations of undiluted material for 8 to 10 days, or until symptomatic relief is obtained regardless of lowering of eosinophilic count.

No toxic effects were noted in any of the cases treated. One patient had slight exacerbation of symptoms following the first inhalation, but when the dose was reduced to 1½ c.c. daily for 2 days

TABLE 1—SUMMARY OF CLINICAL FEATURES AND TREATMENT OF 10 CASES

Case No.	Sex and Age	Duration of complaints	Blood count at commencement of treatment: WBC per c.mm.	Eosinophils: per cent	Eosinophils: Absolute	No. of inhalation treatments given with blood count at termination of treatment	Effect of treatment	Any other treatment with blood count at termination of treatment	Effect of treatment	Follow up blood count
1.	M. 26†	1½ months	9,500	28	2660	9 alternate days, diluted. WBC—7,000; Eosinophils—8% & 560 absolute	Could not be judged as he was asymptomatic at beginning of treatment	—	—	After 1 month: WBC—7000; Eosinophils—9% & 630 absolute
2.	M. 40	3 weeks	13,000	45	4850	8 alternate days, diluted. WBC—8,200; Eosinophils—22% & 1804 absolute	Relieved	—	—	After 1 month: WBC—9300; Eosinophils—18% & 1674 absolute
3.	M. 36	8 days	8,500	20	1700	6 alternate days, diluted. WBC—8,000; Eosinophils—20% & 1600 absolute	Symptoms relieved but rhonchi persisted	Acetylarsan 3 c.c. I.M. bi-weekly x 6 such. WBC—6800; Rosinophils—6% & 408 absolute	Rhonchi cleared	—
4.	M. 45	4 days (occasional attacks 2 years)	9,000	22	1980	7 alternate days, diluted. WBC—8,000; Eosinophils—20% & 1600 absolute	Relieved after 5 inhalations	Acetylarsan 3 c.c. I.M. bi-weekly x 6 such after 2 weeks interval. WBC—8000; Eosinophils—14% & 1120 absolute	—	After 1 month: WBC—7000; Eosinophils 5% & 350 absolute
5.	M. 21	4 days	13,000	50	6500	6 alternate days, diluted. WBC—12,500; Eosinophils—45% & 5625 absolute	Relieved after 4 inhalations	Acetylarsan 3 c.c. I.M. bi-weekly x 6 such after 10 days interval. WBC—9800; Eosinophils—24% & 2342 absolute	—	After 1 month: WBC—6800; Eosinophils—3% & 204 absolute

† Had received a course of 6 Acetylarsan injections 3 c.c. I.M. bi-weekly, completed 1 week previously. Blood count prior to injection treatment was W.B.C. 11,500, Eosinophils 40 per cent.

TABLE I—SUMMARY OF CLINICAL FEATURES AND TREATMENT OF 10 CASES—*Contd.*

Case No.	Sex and Age	Duration of complaints	Blood count at commencement of treatment: WBC per c.mm.	Eosinophils: per cent	Eosinophils: Absolute	No. of inhalation treatments given with blood count at termination of treatment	Effect of treatment	Any other treatment with blood count at termination of treatment	Effect of treatment	Follow up blood count
6.	M. 60	6 days (occasional attacks 8 years)	11,000	30	3300	14 daily, undiluted. WBC—9,000; Eosinophils—17% & 1530 absolute.	Symptoms relieved after 7 inhalations, but few rhonchi persisted after 14 inhalations	—	—	After 1 month: WBC—8600; Eosinophils—10% & 860 absolute
7.	M. 28*	2 weeks	16,500	45	7225	6 alternate days, diluted. WBC—14,250; Eosinophils—52% & 7310 absolute.	Symptoms relieved after 6 inhalations	Acetylarsan 3 c.c. I.M. bi-weekly × 6 such WBC—10,500; Eosinophils—20% & 2100 absolute	—	After 6 months: WBC—9000; Eosinophils—16% & 1440 absolute
8.	M. 27	3 days (occasional attacks 1½ years)	20,000	45	9000	10 daily, undiluted. WBC—16,980; Eosinophils—51% & 5069 absolute.	Symptoms relieved after 6 inhalations	Acetylarsan 3 c.c. bi-weekly I.M. ×6 such. WBC—16,750; Eosinophils—60% & 10,050 absolute.	—	After 6 months: WBC—12,600; Eosinophils—32% & 4032 absolute
9.	M. 30‡	1½ months	13,500	50	6550	20 daily, undiluted. WBC—17,400; Eosinophils—56% & 9744 absolute. After 8 inhalations: WBC—13,000; Eosinophils—40% & 5200 absolute	Slight relief by first few inhalations, not maintained; severe cough & wheezing continued in the mornings.	Aureomycin 250 mg. 6 hourly (total 4 g.) WBC—11,200; Eosinophils—51% & 5712 absolute	Considerably relieved without further treatment, blood count fell in 14 days to WBC 7,800 Eos. 29%	After 3 months: WBC—7000; Eosinophils—8% & 560 absolute
10.	M. 36	2 weeks	20,000	70	14000	20 daily, undiluted. WBC—11,000; Eosinophils—38% & 4180 absolute	Symptoms relieved after 8 inhalations	—	—	After 1 month: WBC—8750; Eosinophils—13% & 1038 absolute

* Had received 1 Acetylarsan injection 5 days before. Blood count prior to this was W.B.C. 19,000, Eosinophils 50 per cent.
‡ Had received 1 Acetylarsan injection outside which had given rise to a severe reaction of cough and breathlessness.

and subsequently raised to 3 c.c. no further reaction occurred. Two patients complained of a bitter or bad taste in the mouth and one had irritation of the throat following inhalation.

One who was intolerant to intramuscular arsenical therapy and did not improve with inhalation therapy, was treated with aureomycin with beneficial results. Chaudhuri (1950 and 1951) and Rao and Krishna (1952) have previously reported on the efficacy of aureomycin in this condition.

In conclusion, it appears that treatment of tropical eosinophilia by inhalation of an arsenical aerosol does not show great advantage over parenteral injection therapy. This is contrary to our expectation in view of the prevalent theory of a respiratory infection in the aetiology of this condition. It may well be that tropical eosinophilia is primarily a systemic disease responsive to small doses of arsenic rather than a purely respiratory infection.

Summary

10 cases of tropical eosinophilia have been treated by inhalation of an aerosol of diethylamine acetarsol from a de Vilbiss atomiser. 9 showed complete remission of symptoms, but the eosinophil count was satisfactorily lowered in 4 cases only. One case was subsequently cured by a course of aureomycin.

The advantages and disadvantages of this route and the various methods used are discussed. Daily inhalation of 3 c.c. for 8 to 10 days is considered to be the best course.

It is suggested that tropical eosinophilia is a systemic rather than a purely respiratory disease, since inhalation treatment had no great advantage over parenteral injection therapy.

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OBSERVATIONS ON THE DEGREE OF SPLENIC AND HEPATIC ENLARGEMENT IN KALA-AZAR AND TROPICAL SPLENOMEGALY

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Cases complaining of prolonged fever, associated with moderate to marked enlargement of both the liver and the spleen are commonly met with in out-patients' practice in this part of our country. Common conditions considered in the diagnosis of such cases are: chronic malaria, chronic kala-azar, tropical splenomegaly, chronic leukaemias, and Banti's syndrome. In the clinical differentiation of these conditions the relative proportion of the degree of splenomegaly and hepatomegaly is considered to be of some value. The commonly held view is that there is a proportionate enlargement of the liver and the spleen in chronic kala-azar, i.e., the liver enlarges along with the progressively enlarging spleen—the proportion being 1 : 1·5 or 1 : 2 as liver is to spleen. In chronic malaria, tropical splenomegaly and leukaemias, the enlargement is disproportionate, i.e., the spleen enlarges very much more than the liver.

Material

In order to find out whether any such proportionate enlargement is present in kala-azar and the relative degree of enlargement of the spleen and the liver in tropical splenomegaly, two hundred cases of kala-azar proved serologically by aldehyde and/or the complement fixation test, and one hundred cases of tropical splenomegaly proved by the process of exclusion were studied. Hepatic and

TABLE 1—KALA-AZAR CASES

Splenic enlargement (inches)	No. of cases	Hepatic enlargement below costal margin (inches)							Proportionate enlargement of liver and spleen		Disproportionate enlargement of liver and spleen	
		Not palpable	Upto 1	1-2	2-3	3-4	4-5	5-6	No. of cases	Percentage	No. of cases	Percentage
Just palpable ...	11	1	7	1	1	1	—	—				
1 to 2	15	1	12	2	—	—	—	—	14	93·3	1	6·7
2 to 4	56	4	26	17	7	2	—	—	26	46·4	30	53·6
4 to 6	81	7	28	17	17	10	1	1	29	35·8	52	64·2
Over 6	37	2	9	18	8	—	—	—	0	0	37	100
Total ...	200	15	82	35	33	13	1	1	69	34·5	120	60

TABLE 2

Splenic enlargement (inches)	No. of cases	Hepatic enlargement below costal margin (inches)					Proportionate enlargement of liver and spleen		Disproportionate enlargement of liver and spleen	
		Not palpable	Upto 1	1-2	2-3	Above 3	No. of cases	Percentage	No. of cases	Percentage
2 to 4	21	8	10	—	—	Nil	0	0	21	100
4 to 6	35	12	10	11	2	Nil	2	5·7	33	94·3
Over 6	44	—	27	12	5	Nil	5	11·3	39	88·7
Total ...	100	17	83	23	7	0	7	7	93	93

splenic enlargements were measured very carefully in each case.

It will be seen from Table 1 that in 63·5 per cent cases of kala-azar, there is disproportionate enlargement of the liver. The proportion is well maintained in small enlargement of the spleen, i.e., in early cases of kala-azar ; but as the disease progresses, there is progressive enlargement of the spleen, but the liver does not enlarge as proportionately as the spleen.

Table 2 gives results of analysis of data relating to enlargement of the spleen and the liver in cases of tropical splenomegaly.

It will be observed that in 93 per cent of cases there is disproportionate enlargement of the liver—but as the disease progresses—hepatic enlargement which may be classed as proportionate—develops in a small percentage of cases of tropical splenomegaly.

CONCLUSION

In early kala-azar, when splenic and hepatic enlargements are relatively small, there is proportionate enlargement of the liver and the spleen. But as the disease advances this proportion is not maintained ; the spleen enlarges more rapidly than the liver and in advanced cases of kala-azar, huge enlargement of the spleen may be associated with very small enlargement of the liver—simulating tropical splenomegaly—in which condition disproportionate enlargement of the liver is almost the rule. So, while differentiating between chronic kala-azar and tropical splenomegaly, too much stress should not be laid on this clinical feature alone and a diagnosis of kala-azar should not be discarded on the basis of disproportionate enlargement between the liver and the spleen without carrying out the aldehyde and/or the complement fixation test.

PHYSIQUE OF THE GUJARATI YOUTH

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The Gujarat University has been carrying out the physical examination of its students for the last two years. In 1953-54, all the students, except those studying in the final years, were examined. This examination was conducted by local doctors according to the requirements laid down by the University, and the findings recorded in a form prescribed by the University. This form consists of two parts ; in part one there are questions about family and personal history, diet, exercise, habits and hobbies. The student fills this part of the form and the medical part of the form (which is part two) is filled up by the examining physician.

Data from about four thousand forms (which form a little less than half the total) chosen at random, were collected and tabulated to get some idea of the students' way of living. This scrutiny shows that 54·3 per cent of the students take some form of exercise everyday ; 73·7 per cent take some milk regularly (which augurs well for our students who are mostly vegetarians) ; 24·4 per cent wear glasses ; 9·7 per cent chew betel leaf as a habit ; whereas 3·8 per cent are smokers. 2·2 per cent of the students write with the left hand.

TABLE 1—SOME OF THE COMMONER PHYSICAL DEFECTS FOUND AMONG THE STUDENTS OF THE GUJARAT UNIVERSITY.

Weak eyesight	16·8	per cent
Ignorance of sex hygiene	7·0	per cent
Enlarged tonsils	5·24	per cent
Disorders of the teeth	4·7	per cent
Tendency to high blood pressure ...	2·5	per cent
Phimosis	2·3	per cent
Enlarged glands	1·4	per cent
Diseases of the skin	1·56	per cent
Urinary disorders	0·9	per cent

The common physical defects of the University students are shown in Table 1 and their heights, weights and other measurements are given in Table 2. These men and women were Hindus being the majority community. Of the other communities, Parsis and Christians were less than even one hundred and therefore their measurements are not given here. The Muslims formed a comparatively larger group and therefore their weights etc. are shown separately in Table 3.

It is worth while comparing our figures with those obtained from other universities. On Table 4 are given some figures obtained from other univer-

TABLE 2—AVERAGE MEASUREMENTS AGEWISE OF STUDENTS OF THE GUJARAT UNIVERSITY

Age in Years	Numbers examined	Weight (lbs.)	Height (inches)	Chest (inches) In expiration	Chest (inches) In inspiration	Chest (inches) Expansion	Abdomen (inches)	Pulse per min.	B.P. (mm. of Hg) Systolic	B.P. (mm. of Hg) Diastolic
MEN-STUDENTS										
15 ...	44	93·24	62·2	27·2	29·25	2·05	24·02	35·13	117·75	74·09
16 ...	248	98·63	62·21	27·94	30·03	2·09	24·07	83·07	112·84	74·4
17 ...	985	102·91	64·14	27·91	30·63	2·72	24·48	80·72	115·90	78·28
18 ...	1815	104·35	64·6	28·7	30·87	2·17	25·68	84·25	114·9	77·04
19 ...	2112	106·16	64·7	29·28	31·37	2·09	25·03	83·23	118·68	77·0
20 ...	2117	112·06	65·09	29·43	31·74	2·31	25·31	84·35	116·29	78·27
21 ...	1285	116·5	65·01	29·9	31·8	1·9	26·15	80·27	118·78	79·39
22 ...	736	112·57	65·07	30·02	32·07	2·05	25·7	82·42	116·7	76·7
23 and above ...	867	113·90	64·93	30·23	32·46	2·23	25·85	83·36	104·89	77·42
WOMEN-STUDENTS										
15 ...	16	91·0	60·8	27·7	29·4	1·7	23·2	83·4	105·1	71·9
16 ...	73	93·3	60·5	27·9	29·9	2·0	23·6	81·1	109·9	71·9
17 ...	217	90·9	60·0	28·1	29·9	1·8	24·5	80·7	109·9	74·3
18 ...	288	93·8	60·1	28·2	29·9	1·7	23·6	78·9	107·6	73·0
19 ...	225	95·6	60·2	28·3	30·0	1·9	23·4	78·8	112·0	78·2
20 ...	135	97·3	60·0	28·9	30·6	1·7	23·6	79·2	114·1	76·3
21 ...	41	95·0	60·3	28·4	30·2	1·8	23·2	80·1	117·7	72·4
22 ...	23	101·2	60·6	29·0	30·5	1·5	24·4	76·0	112·8	75·0
23 and above ...	21	107·1	61·0	29·7	31·2	1·5	24·6	82·3	116·0	78·4

TABLE 3—AVERAGE MEASUREMENTS AGEWISE OF MUSLIM STUDENTS OF GUJARAT UNIVERSITY

Age in years	Number	Weight (lbs.)	Height (inches)	Chest (inches)			Abdomen (inches)	Pulse	B.P. (mm. of Hg.)	
				Expiration	Inspiration	Expansion			Systolic	Diastolic
17 ...	10	113·1	66·5	30·3	32·3	2·0	26·3	82·7	115·4	78·5
18 ...	52	108·8	64·7	29·6	31·4	1·8	22·8	78·2	107·2	71·7
19 ...	58	107·6	65·6	29·5	32·5	3·0	25·1	84·9	106·8	78·2
20 ...	70	110·6	65·0	30·0	32·0	2·0	25·5	81·9	123·2	69·2
21 ...	42	109·4	65·3	29·8	31·9	2·1	25·2	82·9	115·8	77·6
22 ...	21	112·9	65·0	30·5	32·5	2·0	26·4	85·2	119·7	80·3
23 and over ...	34	114·7	64·9	29·8	31·9	2·1	26·5	83·4	114·8	77·8

TABLE 4—COMPARATIVE MEASUREMENTS OF STUDENTS OF GUJARAT AND OTHER UNIVERSITIES

Age 20 Measurements	Gujarat University 1953-54	Baroda University 1950-51	Calcutta University 1951-52	Bombay (Colleges of Gujarat and Kathiawad) 1939-40	Allahabad University Average of 1935-45
Weight (lbs.)	112·1	106·7	114·2	111·8	122
Height (inches)	65·1	64·52	65·4	65·0	67·5
Circumference of the chest in inspiration (inches)	31·7	...	33·0	32·2	...
B.P.					
Systolic	116·3	...	118·2	...	...
Diastolic	78·3	...	77·7	...	...

TABLE 5—SOME OF THE COMMON PHYSICAL DEFECTS FOUND IN THE STUDENTS OF VARIOUS UNIVERSITIES

Defect	Gujarat	Baroda	Calcutta	Colleges of Gujarat and Kathiawad (Bombay)	Lucknow
1. Defective vision	16·3	26·5	33·8	26·8	14·68
2. Defective vision with spectacles ...	4·3				
3. Diseases of the teeth and gums ...	4·7	3·9	14·3	14·1	8·63
4. Diseases of ear, nose and throat ...	8·7	6·1	22·8 (tonsils only)	14·2	8·77
5. Enlarged glands	1·4	1·0	...	...	...
6. Diseases of the skin	1·55	0·3	0·1	...	3·78
7. Genital uncleanliness	7·0	9·5	...	6·4	...
8. Phimosis	2·35	?	...	...	...
9. Hydrocele	1·15	2·5	...	...	4·62
10. Hernia	0·27	1·3	...	...	0·72
11. Sugar in urine	0·87	2·9	...	...	...
Albumin in urine	0·08	0·05	...	0·96	...
12. Raised B.P.	2·5	?	...	...	...

sities along with ours, and also the measurements of Gujarati youth in 1939-40 when the colleges from this part were affiliated to the Bombay University. Table 5 is a comparative statement of the commonest physical defects found in the student population.

Discussion

A comparison with other universities (excluding Baroda which is geographically a part of Gujarat) shows that the Gujarati youth is physically inferior to the youth from other provinces. It is difficult to attribute this inferiority to poverty or undernutrition resulting from poverty. The inferiority is rather, due to other causes—geographical and climatic, mostly. Lest the reader should misunderstand this statement, let me make it clear that our youngmen are certainly undernourished and malnourished when we compare them with Western students. The cause of this is partly ignorance and partly poverty. An average college student has to spend long hours away from home and is half-starved during this long interval. If provision is made for supplying cheap and wholesome lunch to these boys at their colleges, the writer feels sure that their health would considerably improve. This midday meal should consist of good quality protein and should supply from 600 to 800 calories.

It is a matter of satisfaction that as far as actual physical defects are concerned, the students of the Gujarat University are no worse than students of other universities. One significant finding everywhere is the largest percentage of defective vision. Even the mill-hands showed this defect more than any other. Can this general weakness of vision be due to some fault in our diet or in our environment?

One important aspect of this health survey is that it furnishes data on the blood pressures of more than 10,000 boys and, over a thousand girls. So far as the writer is aware, such data have not been published in the past from this part of the country. Even if we accept the limitation that the examiners were different in different places, it is still remarkable that the B.P. did not show any consistent rise with age.

Acknowledgment

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REFRESHER COURSE

CONGENITAL SYPHILIS

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Innate or congenital syphilis is a chronic infectious disease, contracted by the foetus *in utero*, characterised by the presence of the periods of activity with evident signs and symptoms, alternating with long periods of latency when the infection seems to lie dormant only to appear later in a somewhat modified form. During the periods of activity various features appear at one time or at various times. For example an infected neonate might come for snuffles which disappears after sometime with or without specific treatment. After say 4 or 5 months the child might be brought for osteochondritis that is pseudoparalysis of Parrot. During the 4 or 5 months the child might not show any evidence of the activity of the disease.

Ætiology

Cases of congenital syphilis are becoming less now-a-days, because of the effective use of the antibiotics. The causative agent is the well known spirochaete the *Treponema pallidum*. In innate syphilis, infection of the foetus occurs from the mother through the placenta. The father plays no part in the transmission of the disease, except that he infects the mother. Infection of the foetus very seldom takes place before the 5th month of intrauterine life. It is worth remembering that syphilis is not at all a cause of early abortion. The time of appearance and the type of the manifestations of innate syphilis vary.

If the infection of the mother is recent and she remains untreated, the foetus is almost certain to be infected resulting in (*a*) miscarriage, or (*b*) still birth, or (*c*) prematurity, or (*d*) birth of immature baby, or (*e*) birth of matured baby with evidences of acute syphilis. The prognosis in cases of such live births is not favourable.

If the infection of the mother is old then (*a*) the baby usually appears normal at birth, but may show evidences of the disease later on, or (*b*) the baby may escape the disease entirely. The chances of the child being infected become less and less with each succeeding pregnancy and if the child does get the disease, the evidences will be of less severe type. Foetal syphilis may occur from pregnancies subsequent to one which had resulted in

the birth of a normal uninfected child from a syphilitic mother. Syphilitic infants may be born 15 to 20 years after the mother becomes infected. These signify that, there is no definite rule of thumb in the time of appearance of the disease, nor in the type of lesions.

Pathogenesis

Innate syphilis acquires a much more serious aspect than the acquired type of the disease. The foetus is defenceless against the invasion of spirochaetes. The lymphatic barrier is absent in the foetus. The spirochaetes, however, produce some immunobiological resistance in the baby after birth. It is very important and noteworthy that in infected infants spirochaete 'nests' are found in the organs without these organs exhibiting visible manifestations of the disease. In these 'spirochaete nests', the organisms remain dormant. Later on, with lowering of general resistance of the baby, the 'nests' become broken, organisms become active and produce manifest symptoms of the disease. The time of the manifestation, the type and the severity of the features of the disease depend on the triangular fight amongst (*a*) the number and virulence of spirochaetes entering the foetal circulation through placenta, (*b*) the number of 'nests' formed in the various organs of the foetus or of the, live baby, and (*c*) the natural body resistance and the acquired immunobiological response in the foetus or the live baby. For this reason the disease has multifarious features and periods of latencies.

Third generation syphilis—The question has often been raised whether syphilis can be transmitted through three generations. It is very difficult to prove this, because, although the parents of a syphilitic baby might show stigmata of syphilis the disease might be acquired by them in later periods of life. In spite of these difficulties it has been shown that the disease has been transmitted to the third generation.

Clinical Features

In congenital syphilis two types of lesions are present. The early innate syphilis corresponding to the secondary stage of the acquired disease and the late innate syphilis corresponding to the tertiary stage of adult type of the disease. Certain defects caused by early innate syphilis last throughout life and they are termed as stigmata of innate syphilis. It has already been referred that in innate syphilis multifarious manifestations are seen in one individual at different times. In a minority of instances the infection apparently always remains latent.

Early innate or congenital syphilis:

This type is much more serious than secondary syphilis of the adult, as it resembles a septicaemia in which all organs of the body are involved. If left untreated, it frequently results in death of the child. As in this process there are breaks in the skin and mucous membrane, secondary pyogenic infections may supervene and add to the gravity of the prognosis.

The baby does not gain in weight and gradually becomes atrophic resulting in marasmus. Pallor develops and the patient becomes irritable. Usually fever is associated. The local features are as follows:

Snuffles—Rhinitis is generally the first symptom to appear and is almost always present. The nasal mucous membrane becomes swollen and mucopurulent discharge blocks the nostrils and produces running from the nose. As a result of inflammation, ulcers are produced. These cause nasal obstruction and interfere with breathing and nursing of the baby. At a later stage flattening of the bridge of the nose is produced known as saddle-shaped nose, a stigma of innate syphilis.

Skin lesions—Dermal lesions are mainly of two types—(1) superficial and (2) infiltrating.

The superficial lesions are various rashes, ulcers, boils and blebs. Rashes may be (*a*) maculopapular —elevated, coppery coloured which should be differentiated from the exanthematous rashes; (*b*) flat erythematous which is to be differentiated from the napkin rash, and (*c*) bullous or pemphigoid type elevated blebs, which should not be mistaken with pemphigus neonatorum. Syphilitic rashes are also found in the soles of the feet and palms of the hands. Infiltrating lesions produce thickening, fissuring, scaling and desquamation of the skin. The region of the eye brows and sometimes the eye lashes are involved with partial or complete loss of hair. Nails become pinched and transverse ridges are noticed.

Mucocutaneous lesions—In conjunction with snuffles and skin lesions, manifestations might appear around the nose, mouth, anus and vulva. They are moist lesions and produce fissuring and bleeding. If those around the mouth are deep, they produce scar on healing and lead to radiating scars or rhagades—one of the stigmata of innate syphilis seen in older children.

Condylomas—Flat, raised plaques with moist surfaces occur around the anus and female genitalia. Children brought to the out-patients' clinic with the complaint of piles—are often found to have condylomas.

The larynx may be affected in some cases, producing hoarse cry of the baby.

Pseudoparalysis of Parrot—This is produced as a result of osteochondritis, epiphysitis and periostitis. Osteochondritis is one of the most characteristic and frequent lesions of early innate syphilis. It can be demonstrated in more than 75 per cent of affected babies under six months of age. It is actually an inflammation of the epiphysis and should better be termed—epiphysitis. If the infilammation is severe—necrosis occurs and affects the metaphysis. Thus the cat's paw or moth-eaten appearance can be noticed in the skiagram of bones which is of diagnostic value. The necrosis leads to fractures at the ends of long bones proximal to the epiphyseal line. A pseudoparalysis of the extremities with pain on passive movements then occurs. This type of lesion is mostly seen in the age period of one and four months. The inflammatory lesion may extend further and may produce osteomyelitis and local periostitis. The adjacent joints may also be involved. Secondary pyogenic organisms may then invade and may complicate the whole picture. The changes of osteochondritis usually disappear by about the sixth or eighth month of life but periostitis may remain much longer and the bones show marked thickening of the cortex. Periostitis also involves the bones of the skull. When the inflammation is severe it is partly responsible for the peculiarly flat, overhanging forehead which remains as a stigma in older children.

Dactylitis—In some cases phalanges of the metacarpal and metatarsal bones become affected. The finger or the toe becomes swollen and tender.

Neurosyphilis—The central nervous system is frequently involved in early innate syphilis. The changes in the spinal fluid with or without evidences of meningitis are seen in more than 75 per cent of cases. Clinical evidence of meningitis, if present, signifies a bad prognosis. Low grade meningitis may cause a mild hydrocephalus. Meningovascular involvement occasionally occurs in infancy and lasts on into childhood. Those children become mentally retarded and are prone to the attacks of convulsions and transient hemiplegias. In the cerebrospinal fluid cells are seldom seen over 100 per c.mm. The protein is increased, sugar remains normal, the W.R. is positive and the colloidal gold reaction shows a leutic curve.

Other manifestations—The liver is almost always enlarged and in some cases some degree of jaundice exists. Spleen and lymph nodes are usually enlarged. Anaemia is usually associated, the degree of which, however, depends on the severity of the infection. The cause of anaemia is the affection of the bone marrow by the spirochaetes. Haemorrhages from the mucous membrane and umbilical cord also are contributing factors. In severe type of syphilitic infection the level of the serum protein is lowered to a great extent and parents might bring a swollen child who is suffering from innate syphilis. Syphilitic wig and alopecias are seen as evidences of early innate syphilis.

Important stigmata of innate syphilis—The child, who gets manifestations of innate syphilis in infancy, usually carries some stigmata of the disease throughout life. The common stigmata are: stunting of growth, flat face and high forehead, Parrot's nodes and hot cross bun on the skull bones, saddle-shaped bridge of nose, small mouth with rhagades, Hutchinson's permanent upper incisors with ntches, Moon's permanent dome-shaped first molar tooth. The eye changes are a keratic scar, irregular pupil, rarely of Argyll-Robertson type, chorioretinitis and optic atrophy. Deafness, either due to the damage of the eighth nerve or due to the association of periostitis of cochlea.

LATE INNATE SYPHILIS:

Interstitial keratitis—Inflammation of cornea is the most frequent active manifestation of late innate syphilis. It occurs at any age between 4 and 20 years but commonly seen between 6 and 12 years. The inflammation begins in one eye, but extends to the other very soon. Some scarring of cornea always remains. The vision is not usually affected unless there has been an accompanying iritis or chrioretinitis. In this connection, Hutchinson's triad is worth mentioning. It is a syndrome of interstitial keratitis, Hutchinson's notched incisor teeth and deafness of the ear due to the damage of the eighth nerve and/or periostitis of cochlea.

Neurosyphilis—The second most common lesion of late innate syphilis, is the affection of the nervous system, the clinical features of which simulate those of meningovascular syphilis. They are irritability, restlessness, convulsions, hemiplegias and dementia. True juvenile paresis with memory defects, delinquencies, delusions and hallucinations are rare as they appear later still, after about twenty years. Juvenile tabes dorsalis is exceedingly rare. The prognosis of neurosyphilis is unfavourable when mental deterioration and dementia develop.

Other manifestations—Older children affected with the disease are seen to complain of pain in legs particularly at night. Periostitis of long bones producing (sabre tibia) and gummas of skull bones are also evidences of innate syphilis. Choroiditis, retinitis and optic atrophy are common features of the disease. Painless effusion in one

or both knee joints known as Clutton's joints are seen in older children affected with the disease.

Management

Preventive—If preventive medicine were ideally practised, innate or congenital syphilis would have been wiped away. Tests for syphilis should be carried out on every pregnant woman as early in pregnancy as possible and should be repeated at about the 5th or 7th month. Treatment should be given to every pregnant syphilitic woman whether the serologic test is negative or positive and whether or not she has had antisyphilitic treatment previous to the present pregnancy. Satisfactory results are obtained if the treatment is started before the 5th month of pregnancy. In such cases only 5 per cent of the infants will have the disease.

Curative—The infant born of a syphilitic mother should be closely examined and he should not be treated unless either clinical and/or serological data show adequate evidence of syphilis. It should be remembered that the W. R. of a syphilitic new born may be negative. If the clinical evidences prove the presence of the disease the treatment should at once be started and the patient be sent for skiagram of long bones. It should also be remembered that a positive W. R. in the newborn, may merely represent passive transfer of maternal reagin. In such cases a series of titrated W. R. tests should be done within 3 to 6 months. If the reaction becomes negative subsequent tests should be done at 6 months and 1 year of age before the infant is said to be non-syphilitic. One single positive W. R. is never adequate evidence for treatment at any age unless clinical symptoms and/or roentgenologic signs are present.

Penicillin combined with acetarsol is the treatment of choice in innate syphilis. The dose of penicillin varies from 150,000 to 550,000 units per pound body weight. The dosage of acetarsol is ½ tablet (0·25 g. each tablet) daily for the first week, ½ tablet twice a day for the second week, ½ tablet thrice daily (with convenient gaps) until the W. R. of the blood continues to be negative for one month. The child must remain under observation for 2-3 years after the treatment has been completed. W. R. of blood is to be done at intervals.

Other drugs—Sulpharsenobenzene should be given I.M. The course consists of 8 weekly injections. The first dose is not more than 0·02 g., and this may be gradually increased to a maximum of 0·12 g. In weak babies the starting dose should be 0·001 g. The course should be repeated in 3 months time beginning with a dose of 0·06 g. and working up to 0·2 g., in older children—up to 0·3 g. Intravenous therapy can be advocated in older children.

Bismuth—Usually given I.M. 20 per cent suspension of the metal in isotonic glucose solution can be used.

Dose—For infants, 0·02 g. once a week over a period of 6 to 8 weeks. In older children, the weekly dose should be increased to 0·05-0·1 g.

Mercury—Usually used along with arsenic. Hydrag. cum creta ½-1 gr. twice a day along with aromatic chalk 2 gr. by mouth.

General—In addition to specific drug treatment, some of the symptoms call for special management.

(*a*) Snuffles—one drop of ½-1 per cent sodibicarb solution in each nostril before the feeding times.

(*b*) Breast milk should always be allowed in breast fed babies. Breast milk feeding improves the prognosis.

(*c*) Anaemia—Ferrous salts (best in the form of ferrous gluconate). Dose—10-30 mg. daily according to tolerance.

TONSILS AND ADENOIDS IN CHILDREN

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There is no subject in the E.N.T. speciality which is more important than the operation on tonsils and adenoids in children. It is an operation the necessity for which often cannot be explained by pathology but is justified by results alone. It is not an operation the technique of which has been influenced by changing fashions, at any rate, in this State ; the one fashion (the dissection method) that exists, has lasted for three generations and does not show signs of change.

More than 20 per cent of the children among the well-to-do population, about 25 per cent of the lower middle class and more than 30 per cent of the still lower class seem to have had their tonsils operated upon. An operation which is practised as often as this is particularly difficult to adjudge for, clearly, there must be many who undergo tonsillectomy unnecessarily.

Let us take into consideration the fate of the child who is advised tonsillectomy where no real justification exists. The operation is not serious in experienced hands, the immediate mortality hardly any, and the complications few, particularly now with chemotherapy and antibiotics. The loss of the tonsils may not have injurious effect on the body. There is therefore, the temptation to give

the child the benefit of doubt and advise removal of the tonsils in the hope that there will be some good result—an attitude which is not quite correct and contrary to the fundamentals of good medicine.

Indications

Although there is general agreement with regard to the indications for tonsillectomy and adenotonsillectomy this subject still continues to provide a field for a great deal of discussion. The complexity of the problem is increased because the function of the tonsils is still not definitely known.

Age—It is believed that the tonsils play an important part as a defence mechanism and waiting is suggested wherever possible, until the child reaches the age of five. Children who have had early removal of tonsils and adenoids may show greater incidence of infections of the upper respiratory tract. Nevertheless, when definite indications exist, age is no contra-indication.

Hypertrophy alone does not constitute an indication for removal, for, between 3 and 8 years there is often a physiological enlargement. But when this enlargement obstructs respiration, deglutition, speech or the Eustachian tube, there is an absolute indication for surgery.

Sore throats—Repeated attacks of sore throats with persistent tender tonsillar glands, acute infection or adjacent abscess or cellulitis are again absolute indications for surgery. In this connection, it may be mentioned that frequent colds and sore throat, chronic cough, nasal stuffiness and mouth breathing which are often attributed to diseased tonsils and adenoids may be entirely due to allergy. Very often patients whose tonsils have been removed for the above symptoms return to us because they have had no relief. In such cases surgery will not clear up the symptoms and treatment for allergy should be given.

Cervical glands—If these enlarge regularly during attacks of pyrexia the most probable cause is a recurrent tonsillitis. There may or may not be any pain in the throat associated with it. Enlarged tonsil glands are added indications for tonsillectomy, if associated with sore throat, but by themselves they do not justify operation.

Tuberculous cervical glands—If this diagnosis is made, tonsillectomy is only to be recommended if there have been recurrent attacks of tonsillitis. A few who have made bacteriological and histological studies of the removed tonsils in cases of cervical node tuberculosis believe that infection in cervical node tuberculosis is most frequently from sources other than tonsils. In places where bovine infection is rare, primary tonsillar tuberculosis is also rather rare.

Diphtheria carriers—Tonsillectomy is indicated when all other measures have failed.

Colds—The complaint of frequent colds may be a mere allergy or sometimes the only symptom of an antral infection and this in turn may be secondary to infected adenoids which may require removal. Tonsillectomy should be advised only when they are known to be infected.

Aural history—Recurrent attacks of earache or impaired hearing or a discharging ear are symptoms of infection of the adenoids or postnasal space. It is astonishing how a small collection of adenoid tissue will maintain infection in the middle ear. Adenoidectomy alone is indicated.

Snoring is a symptom which cannot be given an exact place. Snoring, usually means, in a child, nasal obstruction and suggests enlarged adenoids.

With regard to adenoidectomy there is no age limit. The effects of diseased or hypertrophied adenoid tissue are usually worse than those of the operation and hence the operation should be done whenever indications are present.

Focal sepsis—The problem of tonsillectomy to remove a source of infection does not arise so often in childhood as in adult life. The commonest illnesses for which the surgeon is requested to do tonsillectomy are rheumatic fever, nephritis, arthritis, recurrent upper respiratory tract infections, ankylosing spondylitis and hypothyroidism. In upper respiratory infections such as sinusitis, the tonsils may serve as a focus of infection, if they are chronically infected. In rheumatic fever, history of recurrent tonsillitis or signs of chronic infection are indications for removal. In subacute bacterial endocarditis an occasional association of tonsillar disease is reported but dental affections are more usual. In Bright's disease when the chronic stage is reached irreversible changes have already taken place in the kidney and removal of tonsils is of no avail. Tonsillectomy, if at all indicated, should be done as soon as the acute stage has subsided.

Persistent pyrexia—If the physician or the pediatrician can find no other cause for continuous pyrexia and is anxious to have the tonsils removed, the responsibility must be shared between the otologist, the physician or the pediatrician and both must be prepared for a disappointment.

Asthma—There are differences of opinion on this subject and unless there is chronic tonsillitis, tonsillectomy has no appreciable effect upon asthmatic conditions.

Bronchitis—It is seldom due to an upper respiratory tract infection in children ; bronchiectasis, however, may rarely follow such infection. A child may have its tonsils removed quite successfully and

have no more sore throats but the bronchitis will continue.

Poor general health—This is another cause for avoiding tonsillectomy. In cases of this kind where the history and signs of tonsillar infection are not convincing tonsillectomy may not be disastrous but will simply be disappointing.

Preoperative Preparation

With regard to pre-operative preparation proper attention regarding the psychological aspects is often neglected. More and more emphasis is being placed on the psychic trauma. A mental trauma is just as real as mechanical trauma and it is often easier to recover from physical injury than from a psychological trauma. Certain children appear hardly affected psychologically by this operation, while others undergo a most serious shock after the same treatment. The psychical preparation of the child is not exclusively in the hands of the specialist treating the patient or the hospital staff or the family doctor, but, above all, in the hands of the parents.

To prevent the occurrence of more than the inevitable minimum of psychical shock pre-operative preparation consisting mainly of basal anaesthesia is necessary, so that the child is then wheeled into the operating theatre sleeping. This helps to allay apprehension, prevents psychic trauma and also reduces the post-operative distress. Another advantage is the smaller amount of general anaesthetic required for the maintenance anaesthesia during the operation. This method ensures patient-safety with the least amount of unpleasantness, and proper working conditions for the surgeon. It should be ideal if the parents are with them before and during the post-operative recovery period.

It is distressing to see children being dragged into the operation theatre or to the anaesthesia room shrieking and held down by half a dozen strange hands and suddenly choked down by the unpleasant anaesthetic poured over the mask, to the extent of producing almost a death struggle for the patient. This no doubt is a very primitive performance and an unforgettable incident for the child all his life at which, he looks back with horror.

Operation

The guillotine method is fairly quick but has many more disadvantages than the dissection method. The operation of removal of the tonsils and adenoids in children is not a minor operation and to do it properly, needs time and training. The dissection method has stood the test of time.

Prevention of Complications

A few points to be observed in preventing the complications of adenotonsillectomy are, competence and experience of the operator, hospitalisation of the patient several hours before surgery, full explanations of the procedure to the patient if possible, avoidance of surgery during acute local conditions or during epidemics, detailed pre-operative instructions, adequate premedication, skilled anaesthesia, complete removal of tonsil tissue, complete haemostasis, continuous suction and proper post-operative care. Careful selection of patients and a good surgical technique should provide favourable post-operative results.

Prognosis

Factors influencing prognosis are incorrect pre-operative diagnosis, finding a sign which is not there, vague indications which call for a stretch of the imagination, faulty operative technique, depending upon doubtful methods and a command performance wherein the operator is told to take out the tonsils and adenoids.

SPECIAL ARTICLE

THE ACTION OF SODIUM AND POTASSIUM ON UNSTRIATED MUSCLE AND ITS RELATION TO HYPERTENSION

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AND

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The action of sodium and potassium on unstriated muscle is of importance in view of their possible relation to hypertension ; recent evidence indicates that the cause of essential hypertension is peripheral and resides in the smooth muscle of the blood vessels. There is increasing evidence for an association between the metabolism of sodium and experimental hypertension. An excessive administration of salt or a positive sodium balance induces or aggravates hypertension in various species. Dogs and rats with renal hypertension showed increased concentrations of sodium in various tissues (Larmore and Grollman, 1950).

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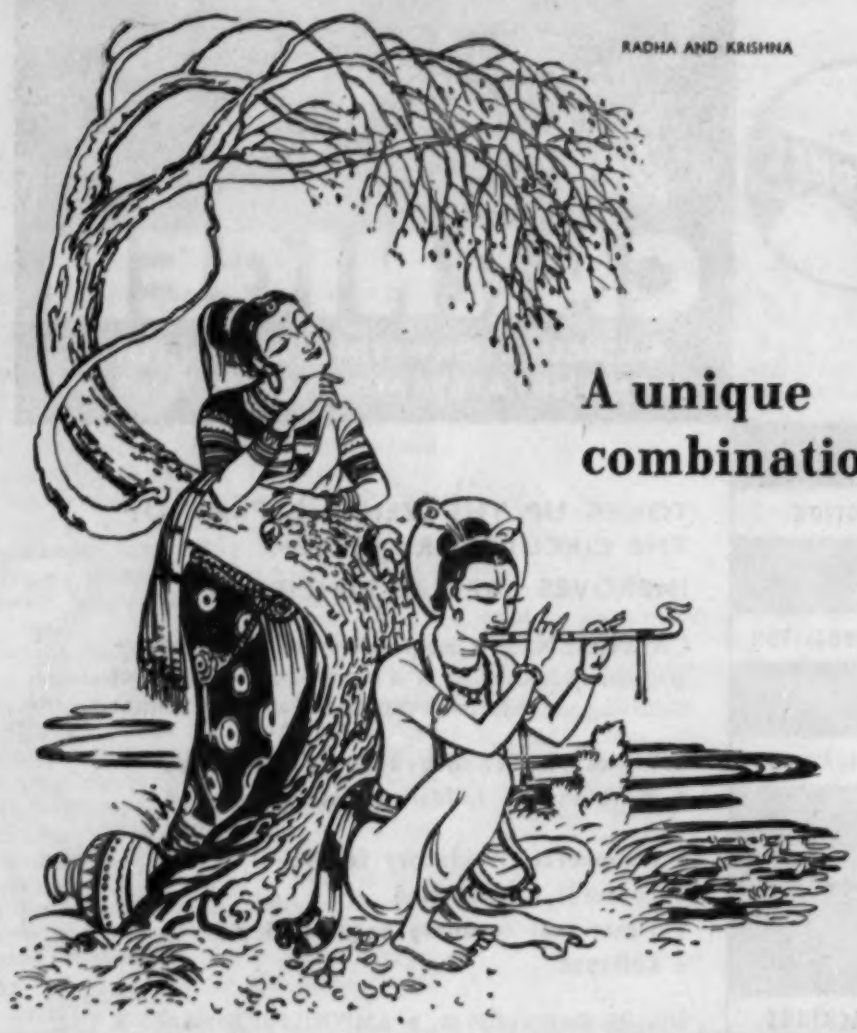

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The action of sodium and potassium on unstriated muscle may be studied from the following aspects: (1) The influence of sodium and potassium content of muscle on its tone. (2) The effect of these ions on the contractile mechanism. (3) The effect of these ions on the excitatory mechanism. In the present paper we have summarised our observations, which have been published elsewhere.

The influence of sodium and potassium content of unstriated muscle on its tone—The increase in the sodium content of unstriated muscle appears to increase its tone, as shown by the following observations: (1) Isolated unstriated muscle contains more sodium than striated muscle and it also shows greater tone and viscosity. (2) If unstriated muscle is soaked in Ringer's solution for a few hours, its tone, viscosity (Winton, 1930) and sodium content (Singh, 1938a) increase. (3) Sodium content as well as tone increases if the muscle is cooled. In these muscles, excessive tone and viscosity are reduced by treating them with sodium deficient solutions (Singh, 1938a). (4) Frequent stimulation increases tone as well as sodium content (Singh, 1939a), (5) Tone as well as sodium content increases in the absence of calcium (Singh, 1938a, b). (6) Dog's stomach muscle contains more sodium than frog's stomach muscle and the former shows greater tone than the latter (Gokhale and Singh, 1945); a greater sodium content implies lesser potassium content and *vice versa*. (7) Some unstriated muscles rapidly gain potassium from an isotonic solution of potassium chloride (Singh 1938a, 1944), and show marked reduction in tone and viscosity (Singh, 1938c, 1943). (8) Increase in the osmotic pressure of the medium increases the concentration of potassium inside the muscle fibres (Gokhale and Singh, 1945), and causes reduction of tone (Singh, 1939b).

The effect of sodium and potassium on the contractile mechanism—Ions will produce permanent effects by direct action on the proteins of the contractile mechanism; a tonic contraction produced by an ion by such action will not require continued expenditure of energy for its maintenance. To study the action of ions on the contractile mechanism, the excitatory system has to be excluded.

Two methods have been employed to study the action of ions on the contractile mechanism of unstriated muscle. In the first method, the muscle is allowed to die in a solution (Singh and Singh, 1949, 1950). As the excitatory system and the permeability of the muscle is destroyed, the substances in the solution act on the contractile mechanism. By such method, it has been found that sodium chloride has a contractile effect on the contractile mechanism, and potassium has the opposite action. The effect of sodium chloride is counteracted by small concentrations of calcium, potassium and magnesium. The effect of potassium is antagonised by small concentrations of calcium and increased by magnesium.

In the second method, the muscle is killed by heating to 50°C. for a few minutes (Singh and Singh, 1954, 1954a, 1954b). This is an interesting preparation. Most substances that cause denaturation of protein cause it to relax; heat has also such an action. According to modern theory, denaturation consists of an alteration of the specific internal structure of the protein wherein the closely folded peptide chains unfold. Similarly the contraction of muscle is supposed to be due to folding of the contractile protein; so relaxation would be due unfolding of the muscle proteins. Thus according to these views, the process of relaxation of muscle would be similar to denaturation of proteins. These experiments thus give an indirect evidence of chainfolding during contraction.

The heat killed muscle is relaxed by potassium chloride and this effect is counteracted by sodium chloride (Singh and Singh, 1954b). Thus it is clear that potassium relaxes the contractile mechanism and sodium has an opposite action.

Effect on the excitatory mechanism—The effect of sodium and potassium on unstriated muscle through the action of the excitatory system is variable. A slight increase in the sodium chloride content of the medium sensitises the muscle to other substances (Singh, 1938b, 1942); opposite effects have also been noted.

Failure of relaxation—An interesting property of unstriated muscle is that with continued stimulation, relaxation becomes imperfect, so that it enters into a tonic contraction; substances that previously relaxed it, now fail to do so (Gokhale and Singh, 1945; Singh and Singh, 1949, 1952, 1947). This results in failure of relaxation on withdrawal of the stimulating substance, so that a persistent tonic contraction is produced, though the stimulating substance is no more present in the surrounding medium. This is probably due to change in the nature of tone (Singh and Singh, 1950), and experiments on heat killed muscle suggest that it is due to some alteration of the contractile mechanism (Singh and Singh, 1955).

The above experiments explain the persistence of hypertension after a pressor substance is no more demonstrable in the blood. Thus hypertension started by renin, nor-adrenaline or nerves will become permanent, and will not subside on the cessation of their effect. This will also explain the action of drugs, which may initially reduce the blood pressure, but later on fail to have any effect,

We have explained this persistent contraction on the assumption that unstriated muscle contains a system in which relaxation is active, so that with persistent stimulation, exhaustion of energy stores result in a tonic contraction due to failure of active relaxation (Singh and Singh, 1950, 1949, 1952).

These results on isolated unstriated muscle have been extended to the unstriated muscle of the blood vessels in perfusion experiments of the hind limb of the dog. The effect of sodium and potassium chloride was tested on the dying and heat-killed arterioles. As with isolated unstriated muscle, sodium chloride has a constricting and potassium chloride a dilatory effect. This explains the role of sodium in hypertension.

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PUBLIC HEALTH

THE HEALTH AND RELATED CONDITIONS OF THE STUDENTS OF TWO COLLEGES IN MASULIPATAM

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Since 1944, the Andhra University prescribed that all students of colleges affiliated to the university should undergo medical inspection every academic year. The students and the medical examiner are required to complete an exhaustive schedule. The author has been conducting the medical examination of the students studying in the two first-grade colleges situated in Masulipatam, viz., the Hindu College and the Andhra Jateeya Kalasala since 1949. Intermediate and degree class students were covered during both their junior and senior classes, but they are considered under different age groups. For instance, a student aged 17 in the junior class who is reckoned once in age group 17 years comes under observation in the senior class in age group 18 years. On this basis, the study includes 9038 college students. Their socio-economic conditions, general health conditions, prevalence of diseases and evaluation of the trend of growth are presented in this article. Students from Krishna, West Godavary and Guntur districts form the bulk while Nellore and Rayalaseema districts contribute sparingly.

The university schedule consists of two parts in one of which the students are required to furnish information regarding their age, caste, community, family, financial status, dietetic habits, extracurricular and general habits while in the other is laid down a procedure for systematic examination of height, weight, chest and clinical condition of all the systems of the body.

CASTE : Distribution of the students according to caste is given in Table 1.

TABLE 1

Description of caste	No. of students	Percentage of each caste to the total number of students
Non-Brahmin—		
Non-backward ...	4752	52·6
Backward ...	949	10·5
Scheduled classes ...	387	4·3
Brahmins ...	2596	28·7
Muslims ...	219	2·4
Indian Christians ...	130	1·4
Others ...	5	0·1
Total ...	9038	100·0

Majority of the students are from Hindu non-Brahmin (non-backward) communities while the next largest group is from the Brahmin caste.

OCCUPATION OF THE PARENTS : The occupation of the parents is divided into seven categories and the number in each is noted in Table 2.

TABLE 2

Nature of occupation of parents	No. under each category	Percentage to the total
Officials ...	1470	16·3
Professionals ...	1001	11·1
Traders ...	953	10·5
Agriculturists ...	4703	52·0
Artisans ...	329	3·6
Unskilled workmen ...	522	5·8
Others ...	60	0·7
Total ...	9038	100·0

The majority of the students belong to the agriculturist class as the bulk of the students come from the fertile delta areas of the rivers, Krishna and Godavary. The next largest group belongs to the class of officials.

ECONOMIC POSITION: The university schedule lays down five categories which are rather arbitrary. The State Government fixed four levels of income for purposes of the annual returns to be submitted by the colleges to the education department in regard to the financial status of the family to which the student belongs. Table 3 shows the number and percentage of students belonging to the various income groups.

TABLE 3

Economic category according to university schedule	Income group	No. of students in each group	Percentage to the total
	Rs.		
Enough for pleasures and charities.	6001 and above	424	4·7
Enough for ordinary comforts.	2501 to 6000	2082	23·0
Enough for necessities	751 to 2500	4309	47·7
(*i*) Enough for subsistence. (*ii*) Carrying on with difficulty.	Under 750	2223	24·6
Total ...		9038	100·0

It is thus clear from Tables 1, 2 and 3 that the agriculturist class, the non-Brahmin non-backward caste and the economic group with income ranging from Rs. 751 to Rs. 2500 form the mode under each table, the corresponding percentage being 52·0, 52·6 and 47·7 respectively.

HABITS: The students are engaged in the college for six hours a day and devote about five hours for study at home, two hours for sport and pastime, about seven hours to sleep and the remaining four hours are usually spent in attending to ablutions, etc. Majority of the students take two meals a day with a breakfast consisting of one of the South Indian dishes. The staple article of diet is rice either pounded or milled, while non-vegetarians partake of fish or meat occasionally. The daily quantity usually consists of:

Item	Amount in ounces	Calories
Rice	12-14	1200-1400
Wheat	2- 4	400- 200
Dhal	2	190
Milk	8	204
Curds	4	86
Vegetables	10	90
Fruits—ripe plantains, oranges ...	3	74
Fats—ghee	1½	130

N.B.—Wheat and fruits do not come into the diet every day. They may be taken at breakfast or lunch occasionally.

Daily diet approximately supplies about 2400 calories. It is definitely below the basic requirement of 2600 calories. It does not also satisfy the extra demands of growing age when the caloric needs are more than ordinary. Only by supplementing this with egg and some more milk every day, can all the protective foods be supplied and physiological needs of the body in the growing period and athletic age can be satisfied. In view of their strenuous life and extravagant habits, the supply of protective foods is insufficient. The nonvegetarian section obtains a supply of proteins of high biological value from fish and meat, but their consumption is not regular. There are no hostels attached to the colleges; hence they had to mess in hotels. So there are no wide possibilities for dietetic variation depending on their social or economic status.

Examinations made were purely clinical. Morbid conditions among the students are shown in Table 4.

TABLE 4—SHOWING INCIDENCE OF MORBID CONDITIONS

Morbid condition	No. of cases	Percentage
Skin :		
Scabies	582	6·11
Fungal and coccal infections ...	525	5·81
Gums and teeth :		
Pyorrhoea alveolaris ...	880	9·74
Caries	214	2·37
Eye :		
Defective vision		
6/9	333	3·68
Above 6/9	1072	11·86
Trachoma	100	1·11
Other minor diseases, e.g., pterygium, chalazion, folliculosis, etc.	163	1·80
Throat :		
Tonsils	745	8·24
Heart :		
Functional	10	0·11
Organic	7	0·08
Tuberculosis	4	0·04
Ear :		
Chronic suppurative otitis media	10	0·11
Blood :		
Anaemia	71	0·79
Avitaminosis :		
Vitamin A	140	1·55
Vitamin B	3	0·03
Hydrocele	138	1·53
Hernia	56	0·62
Varicocele	6	0·07
Phimosis	111	1·23
Deformities, e.g., talipes, scoliosis, infantile paralysis, bifid uvula	17	0·19

ASSESSMENT OF GROWTH: Measurements of height, weight and chest were taken under the following conditions:

(1) Height was taken while standing on bare feet on level base and recorded in quarter inch fractions.

(2) Chest measurements were taken on bare chest at the level of the nipple in half inch fractions during full inspiration and at the end of full expiration.

(3) Weight was recorded in pounds without shoes and with minimum clothing like underskirt or a pyjama.

Agewise averages of height, weight and mean circumference of the chest are shown in Table 5. The observations extend from age 14 to age 26 inclusive. The age noted is age last birthday.

Over 90 per cent of the students belong to the ages between 16 and 21 years. Table 5 shows that the height, weight and mean circumference of the chest increase from age to age till the attainment of the age of 21 years. The data after the age of 21 years are meagre and so no valid conclusions can be drawn.

A study of Table 5 reveals that the height shows a sudden steep rise of nearly 2·9″ from the age 15-16 while the increase from age 16-17 is 1·2 inches. Increase in ages of 17-18 is only 0·8″ and 0·4″ at 18-19 years. It becomes steady at 21. There is no increase after 21 years.

TABLE 5—AVERAGE HEIGHT, WEIGHT WITH THEIR STANDARD DEVIATION AND MEAN CIRCUMFERENCE OF THE CHEST IN 9038 STUDENTS OF DIFFERENT AGES

Age in years	Total number of students examined	Height in inches	Height increase in inches per year	Standard deviation	Weight in pounds	Weight increase per year in pounds	Standard deviation	Mean circumference of chest in inches	Mean increase in the circumference of the chest per year
14	32	59·1	...	4·16	83·2	...	17·91	26·2	...
15	270	59·7	0·6	3·12	86·4	3·1	14·70	28·6	2·4
16	890	62·6	2·9	2·78	97·5	11·1	14·78	29·1	0·5
17	1694	63·8	1·2	2·62	103·1	5·6	13·48	30·5	1·3
18	2230	64·6	0·8	2·17	108·7	5·6	13·96	31·6	1·1
19	1775	65·0	0·4	2·23	113·9	5·2	14·92	32·2	0·6
20	1265	65·4	0·4	2·33	115·2	1·3	16·26	32·6	0·4
21	513	65·8	0·4	2·37	122·0	6·8	16·15	32·9	0·3
22	229	65·5	...	2·41	119·3	...	16·85	33·1	0·2
23	90	65·4	...	2·20	118·4	...	16·66	33·1	...
24	36	65·4	...	2·02	121·3	...	16·17	33·0	...
25	10	65·4	...	2·2	128·9	...	18·90	34·0	...
26	3	63·3	...	...	121·7	...	...	33·6	...

Weight shows an increase of 11·1 lb. from age 15-16 years. This trend gradually falls to 5·6 lb. in the subsequent ages till it becomes 1·8 lb. from age 19 to 20 years. Thus a maximum weight of 122 lb. is reached by 21 years. The variation in weight in the age group 17-19 is considerably more than the variation in height.

The mean circumference of the chest also increases with age and the variation is not so steep but it is maximum in the age of 16-17 years and then the difference gradually falls to 0·2 at age 21-22. Thereafter, there is no increase in the measurement of the chest with age. It may be remarked in this connection that the mean circumference of the chest is derived by adding half the expansion to the measurement at full expiration. In almost all cases, the mean expansion of the chest after age 16 is around 2 inches and there is no appreciable variation from age to age.

So it is evident that the period of growth is from age 16 to 21. Maximum growth in height is observed in earlier ages while greater increase of weight is seen at the later ages. It probably means that obesity begins to appear after the cessation of growth in height which naturally stops at about the age of 20. Anatomically also growth of long bones is almost complete by that age and no further growth in height can be expected.

As the observations have extended over no less than 9038 students, any relation that might exist between the factors, viz., height, weight and chest was sought for. Height and weight were taken into consideration and selecting every fifth student, 233 samples in one year from all age groups were studied. A range of 18 inches from 55 inches to 73 inches was considered for height with a class interval of 2 inches. A range of 100 lb. in weight from 70 lb. to 170 lb. was considered with a class interval of 10 lb. Coefficient or correlation of 0·45 was obtained showing that though there was some relation between height and weight yet it is not in perfect agreement.

An attempt was made to find out if any relationship exists between height, weight and the chest measurements. Height in inches multiplied by mean circumference of the chest in inches divided by the weight of the body in lb. was observed to evolve a constant value. The value of this constant was worked out for each age group together with the standard deviation. The results are shown in the Table 6.

TABLE 6—SHOWING AVERAGE CONSTANT FACTOR IN EACH AGE GROUP WITH ITS STANDARD DEVIATION

Age in years	Average constant value	Standard deviation
14	20·12	1·689
15	19·87	1·920
16	19·22	1·209
17	18·96	1·059
18	18·21	1·485
19	18·13	1·076
20	18·25	1·295
21	18·29	1·463
22	17·59	1·139
23	17·65	1·309
24	18·48	1·249
Over-all mean of the constant ...	18·42	0·985

Thus a formula

$$\frac{\text{Height in inches} \times \text{mean circumference of the chest in inches}}{18{\cdot}42} = \text{Weight in lb.}$$

was evolved. This formula was tried on every fifth student in 233 samples spread over about 1000 students and the deviation of the observed from the calculated weight according to this formula was worked out when the co-efficient of correlation of 0·908 was obtained. This shows that the values obtained by this formula are very near the observed values.

DISCUSSION

A glance at Table 4 brings to light the striking predominance of the errors of refraction which is said to be common in the school-going age. 15·5 per cent of the students were manifesting varying degrees of defective vision. Myopia was of low degree, i.e., upto 6/12 to 6/18 in some cases, while in others it was seen in gross degree (Finger counting at 60 metres). Cases were found progressive necessitating change of glasses at the subsequent examination. However, during the course of examination, no close association of high myopia and general build of the student could be observed.

Students showing errors around 6/9 complained of symptoms of asthenopia particularly towards the close of the day's work, e.g., headache, lachrymation and congestion of the eyes, etc. Those showing no reduction in the acuteness of vision, but complaining of asthenopia especially after use of the eyes for near work were found to belong to small degrees of astigmatism. A few cases of 6/9 were found associated either with trachoma or folliculosis.

Trachoma was observed in 1·1 per cent of the students. Some of them were found in a commencing stage which were found to have recovered at the subsequent examination. Cases of corneal involvement were not met with.

Pyorrhoea alveolaris and caries comprise about 12·11 per cent of which pyorrhoea forms 9·74 per cent and caries 2·37 per cent. Redness, swelling, bleeding and discharge of pus on pressure of the gum margin were among the clinical features noticed. Varying degrees ranging from mild inflammation of the alveolar margin to severe forms showing marked retraction of the alveolar margin exuding pus with consequent loosening of teeth were observed. A survey conducted in Uttar Pradesh in 1934 and 1935 quoted by Seal (1951) among the school children showed the following incidence of pyorrhoea alveolaris and caries and the comparison is drawn as below:

	Pyorrhoea	Caries
Uttar Pradesh ...	5·3	18·3
Andhra ...	9·74	2·37

11·92 per cent constitute disease of the skin which include scabies, taenia versicolor, dandruff, ringworm, etc.

Of the rest of the diseases, avitaminosis as a clinical observation deserves special mention and a little elucidation. Deficiency of vitamin A manifested itself mainly in the eye in 1·55 per cent of the students and infrequently in the skin producing a condition called "phrynoderma". In the eye, it was seen as xerosis conjunctivae or pigmentation of the conjunctiva. In mild cases, xerosis was seen as a wrinkling of the conjunctiva midway between the limbus and outer canthus of the eyes and in advanced cases Bitot's spots triangular in shape were seen generally on the outer side of the cornea formed by the metaplasia of the conjunctival epithelial cells, which arrest the secretion of conjunctival glands and goblet cells. But singularly enough no associated photophobia or nightblindness was reported. Xerophthalmia was said to occur about 16 times more commonly in children below ten years than in adults (Rao, 1954). This is probably the reason for its low incidence compared to 11·2 per cent incidence in a survey of Uttar Pradesh children below 14 years conducted by Govil (1952). Dhurandhar and Boman-Behram (1940) first described the condition of the pigmentation of conjunctiva in the inmates of an industrial school at Bombay. The pigment varies from light brown to dark brown in colour and in both the eyes. In extreme cases, the whole of the conjunctiva was found pigmented and lustreless; but in a majority of the cases it was seen as a ring round the cornea at the selerocorneal junction or in the selera in the interpalpebral area. Dhurandhar and Boman-Behram (1940) reported its close association with xerosis, thereby suggesting it to be a vitamin A deficiency sign. Therapeutic and dark adaptation tests undertaken at the Nutrition Research Laboratories at Coonoor did not indicate its relationship to vitamin A deficiency (Patwardhan quoted by Govil, 1952). However, its diagnostic significance is still uncertain and disputed.

The deficiency conditions associated with other vitamins were not so frequently present. A few cases of riboflavine deficiency indicated by angular stomatitis and conjunctivitis and glossitis were seen. They occurred after dysentery and only temporarily and not as established deficiency states.

Seven cases of mitral valve disease (rheumatic) were detected. History of rheumatic fever was obtained in six.

Summary

(1) The state of health and the rate of growth in 9038 college students aged 14-26 years in Andhra State studying in two colleges are described.

(2) A formula connecting height in inches, weight in pounds and mean circumference of the chest in inches has been deduced.

(3) The total number of morbid conditions observed was 5157, out of which 1668 were due to eye conditions, 1094 due to teeth and gums, 1077 due to skin, 745 due to throat, 143 due to avitaminosis while 430 were due to other causes.

(4) Deficiency of vitamin A was found to be more common than the deficiency of any other vitamin.

(5) Clinical features of certain diseases are discussed.

Acknowledgment

I am grateful to the managements of the Hindu College and Andhra Jateeya Kalasala, Masulipatam, for giving me an opportunity to study the health of the students of their colleges since 1949-50 as medical examiner of the respective institutions and for permitting me to make use of the material. My thanks are also due to Mr. I. Brahmananda Rao, Assistant Actuary, Andhra Insurance Co., Ltd., Masulipatam for his help, guidance and advice, and Mr. G. Adinarayanasastry, for his assistance in calculations.

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CASE NOTES

INEFFECTIVE CHEMOTHERAPY IN PULMONARY TUBERCULOSIS WITH SEVERE ANAEMIA

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The following two cases of pulmonary tuberculosis associated with severe anaemia did not respond to any chemotherapy till anaemia was actively treated.

Case Reports

Case 1—A boy, aged 8 years, was admitted in Kasturba T. B. Clinic and Hospital on 7-12-1954 with history of fever and cough. The trouble started with fever and afterwards the patient developed cough with slight amount of expectoration. He also gave history of loose motions with occasional blood and mucus.

On general examination, he was found anaemic. The temperature was 104°F, pulse rate was 110 per minute. The left side of the chest was flat with diminished movements. The vocal fremitus was increased. The percussion note was impaired. On auscultation there was bronchial breath sounds with coarse rales. V. R. was increased.

Investigations—R. B. C. 1·8 million/c.mm. Hb.—34 per cent, W.B.C.—8700/c.mm. with polymorphs 78 per cent, lymphocytes 19 per cent and eosinophils 1 per cent; E.S.R.—120 mm. per hour.

Stool examination—A few R.B.C. and pus cells were seen.

X-ray of chest—Left lung infiltration with cavity.

Treatment—The patient was put on streptomytin ½ g. b.d., isoniazid—50 mg. t.d.s. and sulphaguanidine—2 tablets t.d.s.

The treatment was continued for three weeks but no improvement in temperature or symptoms was noticed. The temperature continued to be as high as before. It was thought that the bacilli might be streptomycin-resistant. The blood count, done after a fortnight remained the same as before. After 3 weeks of treatment the patient was put on liver extract 1 c.c. daily intramuscularly, and iron preparation, multivitamin tablets and protein hydrolysates orally. The temperature gradually began to fall and came to normal by about 10-2-1955 (Fig. 1). The anaemia also gradually improved.

Case 2—L., aged 15 years, with history of fever and cough for 8 months had signs of bilateral infiltration.

Investigations—R.B.C.—1·6 million/c.mm. Hb.—50 per cent. Sputum positive for A.F.B.

Treatment—He was treated with streptomycin ½ g. b.d. and isoniazid 50 mg. t.d.s. After about a fortnight's treatment there was no change in temperature and symptoms. The patient was put on 2 c.c. liver extract daily for a week and then thrice a week along with ferrous sulphate tablets orally. In about 10 days the temperature came down and finally settled down to normal.

Conclusion

From these two cases it seems likely that cases of severe anaemia with pulmonary tuberculosis do not respond to antibiotics and chemotherapy alone. The importance of treating anaemia actively is well illustrated in the above cases.

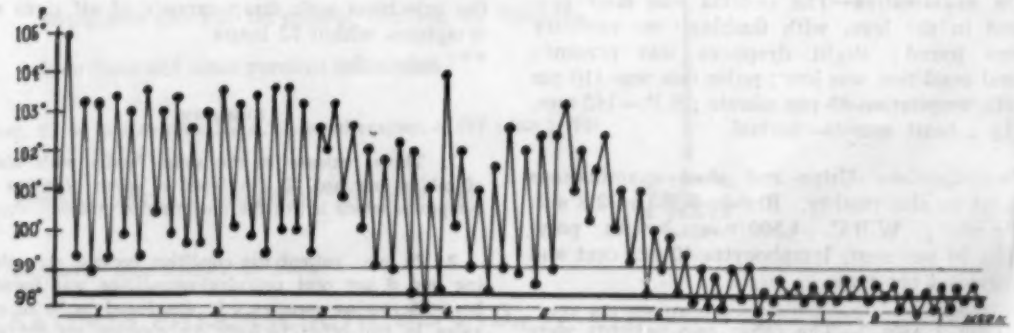


Fig. 1—Temperature Chart (Case 1).

POLYVINYL-PYRROLIDINE IN EPIDEMIC DROPSY

K. P. RAMA, M.B.B.S., D.T.M.,

Bhagalpur.

Recently a preparation containing 6 per cent polyvinylpyrrolidine of low molecular weight as its essential constituent, has been placed in the market. The manufacturers claim that it has the power of absorbing toxins and toxic metabolites from the circulation, by virtue of which it acts as an efficient detoxicant. It is also claimed that it possesses a diuretic action as well, so that it is also of value in cases of nephrosis, chronic nephritis, cerebral oedema etc. Literature references cited in the prospectus by the manufacturers, encouraged me to try it in 3 cases of epidemic dropsy. The results, as will be apparent from the following case notes, were gratifying.

The drug was tried in three patients of the same family, developing simultaneously the same group of signs and symptoms.

There was history of taking mustard oil abundantly in respect of all the cases.

Case Reports

Case 1—P. P., 18 years, Hindu male, developed the following complaints within a period of 15 days:

(1) Oedema of the lower extremities with flushing; (2) slight puffiness of face; (3) slight oedema of hands with flushing; (4) swelling of scrotum; (5) palpitation; (6) diarrhoea; and (7) fever—99°-102°F.

There was no history of any previous attack of this type.

On examination—The oedema was most prominent in the legs, with flushing: no capillary naevus found; slight dyspnoea was present; general condition was low; pulse rate was 110 per minute, respiration 45 per minute; B.P.—142 mm. of Hg.; heart sounds—normal.

Investigations—Urine and stool examinations revealed no abnormality. Blood: R.B.C.—2·8 million/c.mm.; W.B.C.—4,500/c.mm. with polymorphs 56 per cent, lymphocytes 40 per cent and monocytes 4 per cent.

Cases 2 and 3—The other two patients were the father and the younger brother of Case 1. They had the same complaints except that their general condition was not low and no breathlessness was present. As a matter of fact the condition of Case 1 was alarming throughout the course of the disease.

All the three were diagnosed as cases of epidemic dropsy. The points in favour of the diagnosis were—attack in the same family, persistent diarrhoea, persistent dyspnoea without any obvious cause, continuance of fever, slight anaemia and by elimination of other diseases.

Treatment—Treatment in Case 1 was given on the following lines: calcium lactate powder, nikethamide, glucose (intravenous), antihistaminics and tincture ephedra vulgaris in usual doses.

After 4 days with this treatment the oedema and flushing decreased to some extent, but the dyspnoea went on increasing. He was gasping for breath on the 6th day of the treatment.

He was given 6 per cent polyvinyl-pyrrolidine 50 c.c. by I.V. route. Along with it the other drugs noted above were continued. After 12 hours of the first injection the condition of the patient improved markedly and after 72 hours he was 80 per cent better. The drug was continued in 50 c.c. dose, up to a total of 8 injections and all the signs and symptoms of the disease disappeared. The patient was treated with bed rest for another 15 days and haematinics with vitamins were continued.

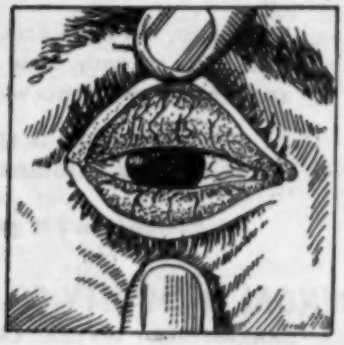
For Cases 2 and 3, the same line of treatment as noted above was adopted but the improvement was very slow. Being encouraged by the effect of 6 per cent polyvinyl-pyrrolidine in Case 1, after 15 days of treatment, Cases 2 and 3 were also given the injections with disappearance of all signs and symptoms within 72 hours.

Summary

1. Three patients in the same family with history of taking mustard oil developed a group of signs and symptoms which led to the diagnosis of epidemic dropsy.

2. In one patient the condition became very alarming and 6 per cent polyvinyl-pyrrolidine was found to be a life saving measure. It was found to be of great value in two other patients for clearing up the signs and symptoms.

Today, the wide variety of ocular infections caused by bacteria, rickettsia, certain protozoa, spirochetes and viruses, are readily amenable with



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** Mitsui, Y., et al.: Antibiotics & Chemotheraphy, I: 253 (July) 1951

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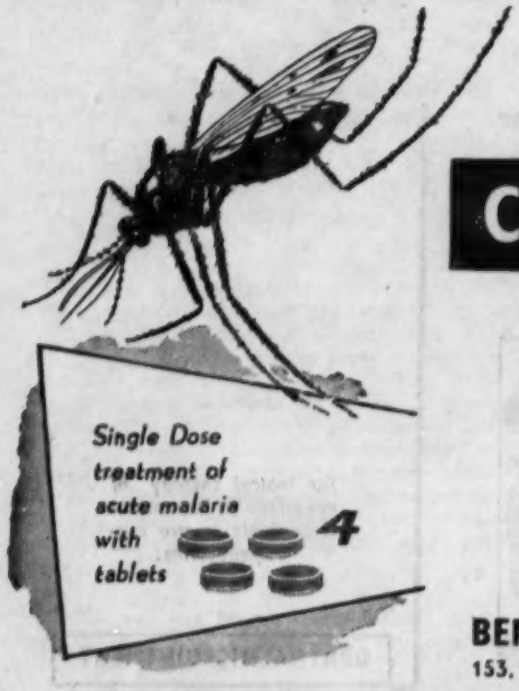

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JOURNAL OF THE
INDIAN MEDICAL ASSOCIATION

CALCUTTA NOVEMBER 1, 1955

PREVENTION OF BLINDNESS

In this country the handicapped person seldom gets a square deal. The blind in India are no exception to this general rule. The statistics on blindness that are available are mostly outdated or unreliable. Their number is in the region of 300,000 to 400,000. We take as our guide a sample survey conducted in Bengal covering 292 villages ; the incidence was 100 per 100,000, the maximum recorded being 264 per 100,000. In States where trachoma is very prevalent the incidence must be much higher. Even taking the lower figure as representative of the whole of India the figure comes out as 360,000.

The sample survey further reveals that 50 per cent of the blindness was curable and 42 per cent preventable, the remaining 8 per cent only being unavoidable. It is therefore clear that most of the persons doomed by circumstances to become blind, can be saved from this catastrophe, if necessary steps for prevention and cure are taken properly and in time. It is sad to reflect that in India becoming blind is virtually synonymous with going out of circulation as a useful member of the society.

Many factors have combined to create this state of affairs. The most representative blind person is the poor, illiterate, simple villager whose lack of knowledge about hygiene marks him out as the natural prey of the quack. The utter insufficiency of preventive and curative facilities contributes its share to maintain such conditions. Finally there is apathy which staggers by its magnitude and embraciveness. The governments, the public and, strangely even the sufferers themselves demonstrate it to a remarkable degree.

The campaign for the prevention of blindness must therefore take health propaganda to the very door of the villager and present it in a way the villager understands.

It should teach the general hygiene of the eye and the necessity of seeking medical aid at the earliest sign of any eye disease ; stress on the danger of falling into the hands of quacks ; urge on the importance of vaccinations as preventive against smallpox and inoculations against typhoid and cholera ; explain the implications of venereal diseases ; advise on the prevention of ophthalmia neonatorum ; urge on the prevention of spread and the necessity of effective treatment of conjunctivitis ; explain the necessity of a balanced diet in the prevention of nutritional disorders ; counsel on preventive and protective measures against trauma in games, festivities and certain occupations hazardous to the eye ; and teach to avoid infection and seek treatment for trachoma.

The joint committee appointed by the Central Advisory Board of Health and the Central Advisory Board of Education, Government of India in their Report on Blindness in India 1944 have made an extensive survey of the matter and have made numerous recommendations. The Report will repay study by all who are interested in the subject.

On the preventive and curative side the travelling dispensaries are doing some useful work no doubt but they do not really touch the fringe of the problem. The temporary camps cannot provide the necessary pre-operative and post-operative precautions and treatment. Those camps should be linked with the existing rural hospitals so that the necessary post- and pre-operative care can be assured.

Hospital facilities as they exist today are far too inadequate. Well-equipped and properly staffed hospitals should be established on a thana or taluka basis. These should have a clinical-pathological laboratory properly equipped.

In establishing such hospitals the priority should be given to places which have easy accessible roads on which an ambulance can run. Wherever communications are meagre the first thing should be to produce the roads and then such hospitals. We quote India's Health Minister Rajkumari Amrit Kaur in conclusion : "As a long-term measure provision of well developed ophthalmological departments in every district and sub-divisional hospitals will be necessary". "Further we shall have to seek, I feel, the help of various types of non-medical workers such as teachers, nurses, health visitors, in addition to that of doctors." Appointment of qualified and trained ophthalmic specialists in these improved district and sub-divisional hospitals would also ensure treatment of patients referred from the rural hospitals and dispensaries.

CURRENT MEDICAL LITERATURE

ACTH and Cortisone in Chronic Hepatitis and Cirrhosis

LEBON AND GELIN (*Ann. Med.*, **55**: 421, 1954, Ref. *Abst. World Med.*, **17**: 273, 1955) report from the Hospital Civil, Oran, Algeria, the results in 16 cases of liver disease treated with cortisone or ACTH (corticotrophin).

Of these patients, 6 had had viral hepatitis for at least one month and had not responded to conventional therapy. In each case the response to administration of the hormone was favourable, resulting in the diminution of jaundice, good diuresis, improved appetite, relief from itching, and, histologically, cell regeneration as confirmed by liver biopsy. The seventh patient, who suffered from severe hepatitis and was thought to be in a state of precoma, made an uneventful recovery when given cortisone. The remaining 9 patients had hepatic cirrhosis and included 2 cases of haemochromatosis, 5 of alcoholic cirrhosis, and 2 of doubtful aetiology. Appetite and well-being increased on treatment with the hormones, and a good diuresis almost invariably resulted. Hyperglycaemia was the only untoward complication attributable to the treatment. The relevant literature is extensively reviewed.

Prednisone in Rheumatic Disease

DORDICK AND GLUCK (*J.A.M.A.*, **158**: 166, 1955) in reporting on the comparative antirheumatic potency, metabolic activity and hormonal properties of prednisone (meticorten) observe:

Prednisone (meticorten), a new synthetic crystalline steroid hormone, was given orally to 12 patients with active rheumatoid arthritis and one patient each with disseminated lupus erythematosus active rheumatic carditis, and acute gouty arthritis with superimposed tophaceous lesions. The suppressive dose ordinarily was 30 mg. daily; the maintenance dose ranged from 5 to 20 mg. daily. With this dose, optimal subjective and objective benefits have been achieved, showing that prednisone is an effective antirheumatic and anti-inflammatory agent.

Electrolyte studies of the serum and urine demonstrated no significant sodium retention or potassium depletion in 14 patients. Salt-loading studies in four cases confirmed this conclusion. The side-effects of prednisone therapy were transient, reversible, and not serious.

Although cortisone, hydrocortisone, and prednisone are qualitatively identical in suppressing active rheumatoid arthritis, prednisone is quantitatively superior and free of significant metabolic, water, or electrolyte disturbances. Milligram for milligram, prednisone is about 4 to 5 times more potent than cortisone or hydrocortisone.

Phenylbutazone

FRASER (*Brit. M. J.*, **1**: 1318, 1955) briefly reviews the literature on the toxic effects of phenylbutazone therapy in rheumatoid arthritis and reports a fatal case in which six complications, namely, ulceration of the lips and mouth, a rash, haematemesis, perforation of a gastric ulcer, jaundice, and polyneuritis and their causal relationship to the use of the drug is discussed. The possible factors in the production of side-effects are mentioned.

It is felt that phenylbutazone is a dangerous drug and should not be employed in the treatment of rheumatoid arthritis, and that aspirin given in maximum tolerated doses is as effective and much less toxic.

Hepatic Necrosis after Phenylbutazone Therapy

MACCARTHY AND JACKSON (*Brit. M. J.*, **2**: 240, 1955) report a fatal case of rheumatoid arthritis in a woman of 73 who received phenylbutazone and cortisone. Necropsy revealed multiple pathological lesions, among which hepatic and renal necrosis were prominent; these lesions are ascribed to toxic action by phenylbutazone. An interstitial myocarditis was probably due to hypersensitivity to phenylbutazone. Pleural and epicardial granulomata were most probably modified rheumatoid nodules. Other pulmonary changes conformed to those found in acute rheumatic disease. The importance of relating the pathological changes found in cases of drug toxicity to the known changes found in untreated cases of the disease for which the drug is administered, as well as to the normal, is indicated.

Abnormal Glucose Tolerance Test in Persons Using Sedatives

MERIVALE AND HUNTER (*Lancet*, **2**: 939, 1954) report on the study of the oral glucose tolerance tests on 23 healthy adults and 16 patients receiving large doses of sedative drugs. The sedatives were mainly barbiturates, 3 of the patients undergoing continuous narcosis and 9 being established barbiturate addicts. The dosage of the barbiturates, most of which were medium- to short-acting ones, varied from 1½ gr. to 32 gr. (0·1 to 2·13 g.) daily. Some of the patients were also receiving chloral hydrate, codeine, paraldehyde, chlorpromazine, promethazine, or morphine. After the patient had taken by mouth 50 g. of glucose in 180 ml. of water, the true blood sugar level was determined on capillary specimens at half-hour intervals for 5 hours. In the healthy subjects the half-hourly determinations continued for only 2½ hours. In 7 patients the tests were carried out during heavy barbiturate medication and then repeated when the dosage was reduced or when the drug was withdrawn.

When the patients' blood sugar curves for the first 2½ hours were compared with the normal range as represented by those of healthy subjects, it was found that the former fell into 4 groups: (1) lag curve (4 cases); (2) prolonged hyperglycaemic curve (7 cases); (3) hypoglycaemic curve (7 cases); and (4) bizarre curve (5 cases). The authors suggest that some of the lag curves and hyperglycaemic responses could be explained on the basis of inhibition by the barbiturate of the enzyment systems mediating the oxidation of glucose by the brain, heart, and liver, but the endocrine factors and an accelerated intestinal absorption of glucose could not be excluded. The hypoglycaemic curves are considered to be of interest in the light of the suggestion by other workers that barbiturate intoxication should be borne in

mind in the differential diagnosis of islet-cell adenoma of the pancreas. However, the authors are unable to explain either these curves or the bizarre responses, but suggest that barbiturate medication should be considered as a possible cause of abnormality in the results of the glucose tolerance test, and that caution should be exercised in determining the insulin dosage of diabetics receiving barbiturates.

Clot Culture in Typhoid Fever

WATSON (*J. Clin. Path.*, **7**: 305, 1954, Ref. *Abst. World Med. Bull.*, **17**: 433, 1955) from Grey's Hospital, Pietermaritzburg, South Africa, demonstrates the superiority of blood-clot culture over whole-blood culture in the routine diagnosis of typhoid fever. Employing streptokinase-bile-salt broth as the culture medium and artificially infected human blood clots, he obtained a greater number of positive cultures in a shorter incubation time with clots drained free of serum than when the serum was allowed to remain on the clot. With artificially infected whole blood culture in bile-salt broth he found that it was necessary to dilute the blood in 1 in 5 to overcome the bactericidal effect, (but in the abstracter's experience a significantly higher dilution of the blood may be necessary with this medium). Finally, in clinical trials on divided specimens the author compared serum-drained clot culture in streptokinase-bile-salt broth with whole-blood culture in ordinary bile-salt (8 to 10 ml. of blood in 50 ml. of medium); he found that whereas the former method gave 100 per cent isolation in 30 bacteriologically proved cases of typhoid fever, the latter method gave no more than 77 per cent.

New Toxoplasma Antigen

THALHAMMER (*J.A.M.A.*, **158**: 212, 1955) at a meeting of the Society of Physicians in Vienna reported his results with the new antigen he has prepared for a complement fixation reaction and cutaneous test for toxoplasmosis. All the antigens that previously had been used were thermolabile aqueous extracts that had to be stored in a refrigerator, or better, a quick-freezing unit and consequently it was difficult to transport them. Each laboratory had to prepare its own antigens. As a result different values might be obtained, and a comparison of results obtained by different laboratories was difficult. The only stable antigen previously available, that of Westphal, was too weak to be of practical value. The new antigen was prepared by the dry-freezing method. The lyophilized antigen can be stored at room temperature and can be ready transported. It proved to be specific and sufficiently strong. For complement fixation a dilution of 1:800 and for the cutaneous test a dilution of 1:3,000 is used. Results conforming with those of Sabin-Feldmann test were obtained from 89 of 100 complement fixation reactions and from 56 of 58 (96 per cent) cutaneous tests. Positive results were obtained even in persons with a Sabin-Feldmann titer of 1:4; those with a negative titer had a negative reaction. The quality of the antigen did not change when it was stored for three months in the warm room of the clinic. If the antigen continues to prove reliable, it will permit standardization of the tests of different laboratories.

Chlorpromazine in Tetanus

ANDERSEN AND OTHERS (*Danish M. Bull.*, **2**: 84, 1955) report a severe case of tetanus in a 10 year old boy who was treated for three weeks with chlorpromazine, d-tubocurarine and manual positive-pressure ventilation with nitrous oxide and oxygen. The outcome was fatal.

Chlorpromazine alone was unable to control the convulsive attacks but may have been of some value as a hypnotic and possibly as a shock-prophylactic.

Trypsine was of great value in keeping the tracheobronchial tree clean when combined with suction, physiotherapy and postural drainage.

Tobacco and Cancer

SANGHVI AND OTHERS (*Brit. M. J.*, **2**: 1111, 1955) from the Indian Cancer Research Centre, Bombay write that the 1,460 patients who attended the cancer clinic during 1952-4 were questioned regarding the habit of smoking and chewing of tobacco in relation to cancers of the upper alimentary tract. Results of the statistical analysis showed that the habit of chewing was associated with cancer of the oral cavity; that the combined habit of smoking and chewing was associated with cancer of the hypopharynx and base of the tongue; and that only smoking was associated with cancer of the oropharynx and oesophagus. These findings are discussed.

Cancer of the Male Breast

It has been estimated that about 1 per cent of all carcinomas of the breast occur in men. Although carcinoma of the breast in men resembles the disease in women in various respects, there are several differences. For one, carcinoma of the male breast is a disease of older men, with the average age of men being about 10 years greater than that of women. The clinical picture of cancer of the breast is more uniform in men than in women, owing to the smaller amount of adipose tissue and the subareolar location of the granular tissue. Tumours are generally palpable on cursory examination of the male breast and are associated with nipple retraction and skin fixation. The axillary and supraclavicular lymph nodes, the lungs, and the central bony skeleton constitute the most common sites for metastasis. Histologically, cancer of the breast is indistinguishable in the sexes and tends to metastasize to the same regions with the same frequency.

Huggins and Taylor (*Arch. Surg.*, **70**: 303, 1955) recently described their observations of a group of 75 men with carcinoma of the breast, 25 of whom had previously received some form of definitive therapy and 50 of whom had been untreated, except for biopsy. Eight per cent five year cures were obtained for the over-all group of patients; this figure rose to 35 per cent for the most favourable cases. The authors emphasize that early vigorous surgical treatment is required to cure cancer of the male breast. The classic radical mastectomy procedure is the treatment of choice for patients with surgically favourable findings as well as for borderline

lesions. Hormonal and radiation therapy offer palliation in less favourable instances. Orchiectomy as an initial procedure renders the best chance for palliation in patients with disseminated disease.—Ed. *J.A.M.A.*, **158** : 191, 1955).

Post-operative Staphylococcal Enterocolitis during Antibiotic Therapy

FOWLER (*Brit. M. J.*, **1** : 1313, 1955) in reporting on three further cases, all fatal, of antibiotic-induced post-operative staphylococcal enteritis observes :

Established cases respond poorly to treatment.

At present, pre-operative large-bowel antisepsis should probably be confined to the use of the poorly absorbed sulphonamides alone. With scrupulous anastomotic suturing, free from tension, an uneventful recovery should follow.

Post-operative use of wide-spectrum antibiotics should normally be reserved solely for the treatment of established complications of some magnitude.

Staphylococcal enteritis is a heavy price to pay for prophylaxis against possible sepsis.

It is now quite evident that in an attempt to banish the risk of sepsis in abdominal surgery—an infection which the unmolested patient will overcome provided it is not excessive or continuing—we may subject the patient to infinitely more serious hazards by the precipitate administration of wide-spectrum antibiotics.

Chlorpromazine Hydrochloride in Intraocular Surgery

NUTT AND WILSON (*Brit. M. J.*, **1** : 1457, 1955) describe a method of anaesthesia for use in intraocular surgery, the agent being a mixture of chlorpromazine hydrochloride and pethidine.

The results obtained in 80 cases have been briefly recounted.

The main advantages of the method are : (1) no co-operation is required from the patient during the operation or for several hours afterwards; (2) it produces a low-tension eye ideal for intraocular surgery; and (3) the recovery is extremely tranquil.

The technique—The night before operation patients receive sedation with quinalbarbitone ("seconal"), 1½ or 3 gr. (0·1 or 0·2 g.). One hour pre-operatively quinalbarbitone, 1½ gr. (0·1 g.) by mouth, and pethidine, 100 mg. intramuscular, are administered; in some frail subjects the quinalbarbitone has been omitted. The patient is brought to the anaesthetic room 15 minutes before the operation is due to start. An intravenous injection of a mixture of 50 mg. chlorpromazine hydrochloride and 100 mg. pethidine diluted to 20 ml. with sterile water is started. The injection is given slowly at the rate of about 1 ml. per minute until the patient falls asleep and can tolerate a lubricated artificial airway. The dose required varies from 20 to 45 mg. of chlorpromazine and 40 to 90 mg. of pethidine. During induction a few patients complain of thirst or palpitations, but these are of short duration. Patients even at this stage are often just capable of responding to shouted instructions, but in a most apathetic way, and their efforts are poorly maintained. On questioning afterwards they have no recollection of this; on the other hand, there appears to be no retrograde amnesia, and all remember coming to the anaesthetic room.

Action of Diamox on Glaucoma

PERKINS (*Brit. M.J.*, **1** : 1273, 1955) in opening the symposium on the subject at the Annual Congress of the Ophthalmological Society of the United Kingdom, London, discussed the clinical aspect. Diamox had a quick action, he said, and might reduce the ocular tension in all types of glaucoma. After a few days' use it might become less effective, but combined with miotics there was an additive effect. In a series of many varieties of glaucoma he had found the tension was reduced and kept so in 48 per cent of cases; it was reduced but failed to remain within normal limits in a further 38 per cent; while in 14 per cent it was unaffected. Diamox was used initially in doses of 500 mg. at once and 250 mg. six-hourly, and later reduced to 250 mg. twice or thrice daily. Its chief use was as a pre-operative drug, particularly in acute congestive glaucoma, but it was disappointing as a therapeutic measure in patients with long-standing congestive attacks. The side-effects consisted of diuresis, nausea, vomiting, and paraesthesiae in the limbs.

Mr. Perkins also discussed the possible modes of action of diamox. The drug was known to inhibit the enzyme carbonic anhydrase, and he described experiments showing that this enzyme is present in iris and ciliary tissue.

Dr. J. Gloster described experiments designed to measure the extent and rate of change in intraocular pressure induced by diamox when given intravenously to rabbits in a dose of 50 mg. per kg. of body weight. Intraocular pressure was continuously measured manometrically, and blood-pressure readings were also taken. In general, the intraocular pressure was reduced by 3 to 5 cm. of water in 15 minutes in the rabbit and the effect began two to three minutes after the administration of the drug.

Dr. M. Langham, from his observations on the entrance of fluorescein into the eye, believed that the rate of flow of aqueous was reduced after the injection of diamox. There was no evidence that the drug produced an increase in permeability of the blood-aqueous barrier, as shown by, measuring the accumulation of ascorbic acid and fluorescein in the eye before and after its use, nor was there any evidence to suggest that it acted by decreasing the resistance to drainage. Studies on the pH of aqueous humour and its ionic content did not answer the question of whether diamox acted specifically on the formation of aqueous humour by neutralizing carbonic anhydrase in the eye, or whether the results on intraocular pressure were of a secondary non-specific character.

In the discussion Professor G. P. Sourdille and Mr. A. Palin gave some interesting clinical experiences with diamox in glaucoma. Dr. Dorothy Campbell showed how the plasma sodium and the degree of diuresis varied with the changes in intraocular pressure after the use of diamox in patients, with glaucoma, and Sir Stewart Duke-Elder summarized the present standing of the drug.

CURRENT TOPICS

XVI CONFERENCE OF THE ALL-INDIA OPHTHALMOLOGICAL SOCIETY

Dr. Kiron Sen of Calcutta, the President of the XVI Conference of the All-India Ophthalmological Society, in course of his address said the following :

At the outset I propose to take up a subject which most of my predecessors in office took up last. Being very actively associated with the Association for the Prevention of Blindness in Bengal for the last 24 years, my thoughts naturally go towards the service to the vast majority of our people who live in the villages, in helping them with the knowledge of hygiene of the eyes, of the methods of prevention of diseases causing blindness, and of early treatment of diseases which will save many eyes.

In a sample survey of 292 villages in Bengal, it was found that 50 per cent of blindness was curable, 42 per cent preventable and 8 per cent unavoidable, and the incidence was 100 per 100,000. In later surveys the proportion remains practically the same but incidence varies in different districts, the maximum being 264 per 100,000. In the states where trachoma is very prevalent incidence of blindness must be much higher. So there is imperative need for planning a campaign for prevention of blindness in all the states; and the curative side must be present along with the propaganda, otherwise the curable cases will fall an easy prey to Vaids, Hakims and couchers of cataract and become incurably blind. Because of this reason, the blind relief eye camps are doing splendid work and should do so till well organised travelling eye dispensaries are provided for preventive and curative work. The campaign, to be effective in the villages, must be impressive and the propaganda must be with visual aids, e.g., film, colourful posters, and magic lantern slides and must be fairly frequent. The chief points in the propaganda for the prevention of blindness are to teach (*a*) general hygiene of the eyes, (*b*) to seek medical aid at the earliest sign of diseases of the eye, (*c*) to avoid quacks and their strong irritant medicine, (*d*) to prevent small pox by vaccination and re-vaccination, (*e*) cholera and typhoid fever by inoculations and re-inoculations, (*f*) syphilis and gonorrhoea by avoiding exposure, (*g*) ophthalmia neonatorum by 1 per cent silver nitrate instillation just after the birth of the baby, (*h*) to prevent diarrhoea and dysentery, so as to avoid most of the keratomalacia, (*i*) balanced diet to prevent all nutritional disorders including keratomalacia, (*j*) to prevent spread and to seek effective treatment of conjunctivitis, (*k*) to avoid or to take protection against trauma either during games or with fire works especially during Dewali and in some occupations, (*l*) to avoid the infection and to seek treatment for trachoma at its earliest stage.

For the above purposes, I do not propose to tire you with quotations from the extensive survey and recommendations of the Joint Committee appointed by the Central Advisory Board of Health and the Central Advisory Board of Education, Government of India, in the "Report on Blindness in India", 1944, but I request all of you who are interested in prevention of blindness to study it most carefully. The prevention of blindness is a big problem, which cannot be solved by any single agency. I quote a few lines from the opening address by the Union Health Minister, Hon'ble Rajkumari Amrit Kaur, of our Conference in Delhi in 1948. Unfortunately we did not take advantage of it all these years. "While the responsibility of medical and other measures for the treatment and prevention of eye diseases and for the welfare of the blind must ultimately fall on Government, such actions as they can take in this field must largely be influenced by the technical advice and guidance which a Conference such as yours can place before the country." "The immediate need is to utilise all the resources within our means to extend help to as wide a section of the community as possible particularly in rural areas and in attempting to do so, we shall have to seek, I feel, the help of various types of non-medical workers such as teachers, nurses, health visitors in addition to that of doctors." "In addition, a medical aid of a higher standard can be made available to the rural population by travelling dispensaries under charge of trained ophthalmologists, these Medical Units concerning themselves not only with treatment of patients but also with the education of the people in prevention of eye diseases." "As a long term measure provision of well developed Ophthalmological Departments in every district and subdivisional hospitals will be necessary to ensure that the campaign against eye diseases is promoted on a sound basis." "In order to assist in the orderly development of such a programme I would suggest that every province should have an Ophthalmological Advisor on the establishment of the administrative head of the Provincial Health Service. The Central Government has already created such a post and is proposing to appoint a suitable officer to it. It will be his duty to assist in co-ordinating and guiding provincial effort in the field." "Education of the people in the care of their own eyes will have to be undertaken on the broadest possible basis. The mother and teacher must play a dominant role in the preventive campaign."

I would request you to form a Committee to formulate a scheme and forward the same to the State and Central Governments. All of us know that our Central and State Governments are extremely busy in executing the first five year plan for the country's self-sufficiency in all directions and also planning the country's second five year plan. Moreover, the Government has got to examine any scheme handed over to them in all its aspects including financial implications. All these take time and I should say about two years. I suggest this time, since West Bengal Government took 2 years to sanction the posts of an Assistant Professor of Ophthalmology, a second pathologist and laboratory assistant for the Eye Infirmary in Calcutta. Till the Governments take up our scheme or some other modified scheme, we must not remain idle. We cannot allow two years to pass by. I would request the members from different states to form Associations for the Prevention of Blindness, and to formulate a scheme for

travelling dispensaries—the numbers will depend on the size of the states, number of hospitals they have to visit (excluding areas and hospitals where there are eye specialists). The capital and annual recurring expenses of each travelling dispensary should be economical and vary according to the financial condition of the state. The Association of Bengal will be only too glad to help any other State to form the Association and to help in the formation of travelling dispensaries. The running cost of each travelling dispensary in West Bengal is Rs. 9,000/- only per year without a motor van and with motor van Rs. 11,600/-. In other States it may cost a little more or less. The travelling dispensaries run by Aligarh are too expensive both for capital and recurrent expenses. Moreover, these are run by specialists from Aligarh, and do not aim at training more specialists who may settle down in different places, towns, subdivisions, etc. The travelling dispensaries run by Sitapur, Government of Bombay and Hyderabad (Deccan), may be the same. Each state has got its own peculiarity and consequently imitation of some other state may not be exactly suitable. If we start our associations and attempt at starting of travelling dispensaries the State Governments will know that we are very keen to serve our people and will most certainly come forward to help. If associations are started in all the States with their travelling dispensaries, helped by the Government of States, it will be quite easy for the Central Government to take up the whole work as suggested by Hon'ble Health Minister of Indian Union. I propose to tell you in this connection a little bit in detail about the Association for the Prevention of Blindness, Bengal. This Association was started in 1930. From 1931 it began its propaganda work on prevention of blindness with magic lantern slides, posters and films. Very soon it became apparent that lectures, however illustrated, do not appeal to the people. In 1936, the first travelling dispensary was started, it was fully equipped for propaganda, diagnosis of eye diseases and their medical and surgical treatments. Propaganda lectures were delivered to the public, to the teachers and students of schools and colleges, in towns and villages, but operative work was always done in hospitals—district and subdivisional hospitals. The dispensary became very popular in a very short time, and by 1941, there were five travelling eye dispensaries, one for each division of Bengal; the Government of Bengal was financing the running expenses of 4 of them and the Association was running one travelling dispensary and an eye examination and lecture unit for examining the eyes of the students in Calcutta and teaching them the hygiene of eyes and the methods of prevention of blindness. The Government of West Bengal realised the very useful work being done by the Association and has been financing all the three travelling eye dispensaries and paying part of the office expenses.

In order to serve the rural areas 188 Thana and Union Health Centres have been opened up to December 1954 in West Bengal. Our dispensaries are now working chiefly in these Thana and Union Health Centres. Consequently the propaganda and curative work is being taken almost to the doors of most of the villagers. This is absolutely essential as a large number of the villagers are too poor to go to any other place.

The dispensaries are working all the year round. Each dispensary is sent to one centre for 1 or 2 months, and the period of stay is extended if the demand is very great.

Travelling dispensaries working in hospitals have some great advantages, e.g., operative work is done in clean surroundings, the Medical Officers in Charge of the hospitals get a refresher course in propaganda and curative work (both medical and surgical), can look after the cases who had developed any complication when the dispensary moves to the next centre and can render effective ophthalmic aid to the people of surrounding villages attending the hospital and health centres after the travelling dispensary had left. High pressure and instrument sterilizers and most of the ordinary medicines are available in the hospital, so the travelling dispensary can travel light. Our medical officers are not worried about diet and sanitary problems of the patients.

The Deputy Director of Health Services (Medical Relief), West Bengal Government, arranges for the movements of the dispensaries, accommodation of the personnel, and their transport into the villages for delivering propaganda lectures, holding clinics, counting blind people and selecting cases for operation who are either directed, or are taken with the medical officer, to the hospital.

Travelling dispensaries are not to be permanent features—these will be required till all District Subdivisional and large Thana Health Centres (50 beds) hospitals will have an eye specialist attached to them and the villagers are educated enough to be able to understand the hygiene of the eye to avoid quacks and their remedies and to seek the medical aid at the onset of any disease and well off enough to be able to go to the nearest hospital for efficient treatment. Some of the Medical Officers and Assistant Medical Officers after sufficient training in travelling dispensaries have settled down in different places, attending to the ocular needs of the people in surrounding villages, and this has been one of the aims of the Association to train many eye specialists and encourage them to settle down in district and sub-divisional towns, where they made a name when travelling with dispensaries.

In towns, myopia seems to be increasing amongst school children. There are many causes for the same—(*a*) often they are sent to school very early, say at 3 or 3½ years of age, (*b*) the printed types of their text books are much smaller than the standard types for different ages (I am attaching the specifications of standard types for English text books for your information. This can be adapted in our vernacular languages text books), (*c*) papers are often glossy, (*d*) while studying they sit in awkward positions and bring the books too close to their eyes, (*e*) insufficient lighting and sometimes glare, (*f*) long hours devoted to reading story books and comic and detective skits (coloured picture with captions underneath) printed in bad paper with small types set too close. When they start myopia, badly fitted cheap, mostly window pane glasses aggravate the condition.

SIZE OF TYPE FOR BOOKS†

Age in years	Size of type		Minimum height of face of lower case letters		Minimum alphabet of lower case letters		Minimum inter-linear space	Maximum number of lines per vertical	Maximum length or measure of line	
	in points	mm.	in.	mm.	in.	mm.	in.	100 mm. or 4 in.	mm.	in.
Less than 7 ...	24-30	3·5	0·14	96	3·78	6·5	0·20	10	—	—
7-8	18	2·8	0·10	72	2·83	4·0	0·16	15	100	3·94
8-9	14	2·0	0·08	55	2·17	2·9	0·11	20	93	3·66
9-12	12	1·8	0·07	50	1·97	2·4	0·09	22	93	3·66
More than 12 ...	10	1·58	0·06	47	1·85	2·2	0·09	24	93	3·66

† These recommendations of the National Society for the Prevention of Blindness are based on the specifications set up in the Report of Influence of School Books upon Eye sight by the British Association for the Advancement of Science, 1913. (For convenience in interpretation, millimeters have been translated into corresponding type sizes and into inches).

When the myopia is increasing, there are no sight saving classes for them so that they may be taken away from the ordinary students' classes. Even if a sight saving class is started, it will be difficult to get students for the same. Almost all guardians are reluctant to send their wards to this institution, because they think it will be a stigma on their wards of being nearly blind.

I am sure, if we begin the work of prevention, the Government will most certainly come forward with finance and other help necessary as the Government of West Bengal has done.

The Eye Camps run by the Government of Bombay, Aligarh and Sitapur Hospitals and Hyderabad Government are doing splendid work, but they do not touch the fringe of their States. It is like half a loaf is better than no bread. A large number of people, treated in these Camps, might have fallen easy prey to the quacks and would have become blind. But the Camps are by no means ideal. These should continue till travelling dispensaries are organised in the State.

I would request this Conference to consider and pass

(1) a resolution requesting the Union Government to pass a law banning the manufacture, advertisement and sale of quack medicines. It is most surprising how quickly the quacks and their wares get wide publicity in all countries and it is specially so in our country. A quack, who claims he can cure myopia without glasses, is allowed to lecture in prominent educational institutions, gets good publicity in the press and well educated people believe in what he says till they are disillusioned after passage of time. Recently in America "fishstory" for cure of cataract achieved its television notoriety in a very short time. The present Law Minister of the Union Government was President of the Association for the Prevention of Blindness, Bengal, for a number of years and he has personal knowledge about the damages being done to the eyes of villagers and even of town folks by quacks and their strong irritant medicines.

(2) a resolution requesting all State Governments to enact a law to prevent couching of cataracts by unqualified persons as has been done by the Government of Central Provinces and Berar in 1944. This will go a long way to prevent blindness.

(3) a resolution requesting all State Governments to pass an order, as has been done by the Madras government, according permission for removal of eyes from dead bodies of destitute persons shortly after death for the purpose of corneal transplantation (grafting). The order has to be definite allowing the eyes to be removed within 3 hours after their death. The cornea of the eyes, removed after that period, may be useless for the purpose of grafting. This will be very useful for curing blindness caused by corneal opacities, and these cases are very common.

(4) a resolution requesting the State Governments to enact a law prohibiting the running of "Blind Relief Camps" by unqualified persons. Smith has made cataract extraction very simple for them and a number of unqualified persons are opening camps for mass operation of cataract. One such appeared in North Bengal in 1953 and he was found out and sent away before he could cause much damage. He designated himself as "Doctor" and "Gold Medalist".

I must, most seriously, warn you that only passing the resolution and forwarding the same to the different

Governments will have absolutely no effect. Armed with these resolutions, our representatives in different states must exert their utmost to convince their respective Governments the necessity of passing these laws. This may be a subject of inter-state competition amongst our members.

I would request you to see some of the magic lantern slides and posters used for propaganda work by the Association for the Prevention of Blindness exhibited in the "Save Your Eye" section.

Teaching of Ophthalmology in Colleges

Ophthalmology is taught in every college, but this is not enough, it must be a compulsory subject along with diseases of Ear, Nose and Throat and must be passed independently. Teachers in Ophthalmology should remember that present-day medical students have to learn many subjects, so, teaching of Ophthalmology should be mostly clinical and visual and confined to common diseases causing blindness and their prevention. All professors and teachers must remember that after graduating these young men will be our messengers for prevention of blindness in the countryside. The teaching should be based on pathology in which case the students will not be required to study their books very much. In Final M.B.B.S. examination in Calcutta University, a question on prevention of blindness is often asked and most of the questions are on conditions commonly seen in the ophthalmic outpatients' departments in any Medical College Hospital.

Post-graduate Studies in India and Abroad

There is no better country for post-graduate studies in Ophthalmology than India. The materials are so vast, that if anybody carefully looks out he can find almost all varieties of cases. It is true that we are so busy in treating such large number of cases that we find little time for more detailed studies of the same.

Our young post-graduates are too fond of operative treatment, which is only 2 per cent of our work and often neglect the most important branch, the refraction work, which constitutes 80 per cent. They get much opportunities to examine cases and follow up the same, in other words all the opportunities to acquire clinical knowledge. In Calcutta Eye Infirmary, a departmental library with 8 magazines of which 5 are on Ophthalmology help them to acquire theoretical knowledge. Still a large number of our students go to foreign countries for studies.

In foreign countries, they acquire a lot of book knowledge and return with one or more diplomas and some of them possess very poor clinical knowledge. A large number of these students would not have gone to foreign countries, unless the appointing authorities in different medical services including the different Governments still considered that a foreign qualification was better than an indigenous one. This view point should change, and sooner it does the better.

We must make all efforts to make the post-graduate teaching as instructive as possible, giving special stress on pathology. I would request the Union Government to allow all apparatuses and equipment for clinical teaching and for laboratory purposes to be free from customs duties and sales tax. Post-graduate teaching will be incomplete without a departmental library and a pathological laboratory. In Calcutta, post-graduate students (D.O.M.S.) have to prepare, stain and examine sections of all tissues, ocular and extra-ocular, including the whole of eye ball in our own pathology department, and demonstrations of slides are given to them with the help of a micro-projector so that they may have no ambiguity regarding different cells, etc. Introduction of high post-graduate diplomas without giving the students sufficient training in pathology, general surgery and medicine should be deprecated. This will mostly help in producing only cataract and glaucoma surgeons.

I advise our post-graduate students, after taking their post-graduate diploma in their own University, to tour round India and visit the different clinics and try to find out which method of examination etc., appeal to them. They need not go out to foreign countries for clinical training or for learning medical or surgical treatments. In this country, they can freely discuss the different methods of examination and treatment with all surgeons in different clinics. In foreign countries, free discussion by our young post-graduates with the surgeons are not often possible because the surgeons are so extremely busy. They have to learn mostly from house surgeons and registrars. I would advise my young friends, who go to foreign countries, to spend more time in the outpatients' and pathology departments. At present they are mostly seen in the operation theatres only and the rest of time they are with their books only. After some years of experience when he can compare different methods of examination and treatment critically he should go out on foreign travel and devote whole time in different clinics to find out the advanced methods, which may suit him. He should not waste his valuable time in trying to get a diploma.

But what is experience? One surgeon can learn more from 50 cases than another can from 1000 cases. To gain experience, one must study every case and every complication critically with proper interpretation of pathology and with sound judgment. One must examine oneself very critically as regards his own capability and also every case of failure. In this way one can make all his failures into "pillars of success". A surgeon's credit does not lie in the quantity but in the quality of his work. A cataract operator is not an ophthalmic surgeon.

Foreign Travel

It is absolutely essential for those in administrative posts and for teachers and research workers. They must periodically go out to collect new ideas in administration, teaching and new methods of research from different centres of learning. The centres, we would like to go to, are far away and living in most of the places is very expensive. All of us cannot expect to get financial help from Government and from the University or from other philanthropic bodies. American and Central

European countries encourage their professors to attend international and other recognised conferences in other countries by allowing them income-tax relief on their expenses, i.e., the expenses incurred are considered as expenses for the profession and as such are not liable to income-tax. Britain has no general rule but a number of professors, teachers and research workers get relief in different ways.

I request our Union Government to give us this income-tax relief on recommendation of the Principals of Colleges or Dean of Medical Faculty so that a number of us can attend the next International Conference at Brussels and other conferences in English speaking countries, Britain and America, and bring back ideas for the benefit of our colleges and hospitals.

Research

It is a fact that there is no tendency for research work amongst us. We are more concerned with treatment, specially surgical treatment. The Adenwalla fund was meant for a Gold Medal for research work. It has not been claimed after 1933 and now it has been converted into an oration.

Our (senior members') shortcomings are partly responsible for this state of affairs. Before independence probably we had no voice, but now it is the eighth year of our independence. Research workers cannot be prepared, they are born and have to be found out by putting them into an atmosphere of research. There must be a stimulus for a response.

We have plenty of clinical materials, have we instituted any clinical research? We are at present capable of clinical research only. Other researches will require the services of very advanced biochemist, biophysicist, and virologist, etc., which can, to some extent, be available in first class research institutes. After the technicians are properly trained, these researches can be undertaken in only a few large eye hospitals. Clinical research is possible in all hospitals and we must convince the Government the necessity of a pathology department or a library or both in a particular eye hospital.

Conclusion

I feel I must say a few words to some very enthusiastic young colleagues of mine specially those who had been to foreign countries and have seen first rate surgeons' operations. They are very enthusiastic as regards operative treatment. One of the best definitions of a surgeon I have heard is "A surgeon is a physician who withholds his knife as long as he can, but when he holds it he does it deliberately." Without critically examining their own capabilities some of them will try all operations on the eyes of very poor patients in the name of being up to date, and in the name of progress and research. How many eyes have been lost in operations introducing Ridley's implant? To my knowledge none has been examined histopathologically to increase our knowledge specially whether Ridley's implant can later lead on to sympathetic ophthalmia in some cases. It would be a first class catastrophe to those individuals experimented on.

I have been educated and trained in an institution with a motto in letters of gold "Do unto others as you would, They should do unto You" and I have always felt that poor peoples' eyes are much more important than mine. If I lose my eyes I would not starve but if a poor man loses his eyes he has to beg, and when unable to do so, will die of starvation. I would advise my very enthusiastic colleagues to examine themselves under the above motto and they will find themselves trying the operations on animal eyes before trying them on human eyes.

In conclusion, I must tell you that Prevention of Blindness does not appeal to a large number of persons even in the Government since we have no tangible result to demonstrate. People will sooner contribute to the societies of the blind out of pity than to the Association for the Prevention of Blindness. In Bengal after 25 years, we can only say that couching of cataract has considerably diminished as there were only 10 cases in the Eye Infirmary in 2 years 1947-49, and at present, very rarely we find a couched eye for demonstration to the students. We all very fervently hope that you will give us all the help we may require, if you are convinced of the rightfulness of the cause. You will notice that I have not requested any of the Governments to help us in any of our activities. I realise that no Government will do anything unless a proper case is made out and properly presented to the Government. When we do so, your sympathy will be an inspiration and your help will be an asset.

XIV ANNUAL REPORT OF THE OPHTHALMOLOGICAL SOCIETY OF BENGAL, 1954-55

The Ophthalmological Society of Bengal functioned from time to time for a few years before 1941. During the year 1941-42, it was re-established formally and the rules and bye-laws were framed.

During the year 1954-55 under review the following activities of the Society are recorded.

Prof. Karl Lindner of Vienna and Dr. E. G. Mackie of Sheffield delivered a series of lectures to the Society during this year. Besides the foreign visitors the society had also the advantage of having several Indian Ophthalmologists like Dr. S. N. Cooper of Bombay and Dr. Mohanlal of Aligarh addressing the Society. Dr. Dukhan Ram of Patna also graced the Society by his presence in one of the clinical meetings of the Society.

By far the largest activities of the Society were its clinical meetings. Last year, the Society had only 6 clinical meetings. But in the year under review the Society had as many as 13 clinical meetings. During the previous year the average attendance of members in the clinical meetings was 40, whereas the average attendance in the present year was 82. In most of the clinical meetings the members read out their scientific papers with case demonstrations, a synopsis of which is given below.

1. Prof. Karl Lindner's address to the Society on 16-11-54 at the General Lecture Hall of Seth Sukhlal Karnani Hospital. Subject: My experience in the Unit-

ed States of America. 2. Clinical meeting held on 17-11-54 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) Glaucoma by Prof. Karl Lindner. 3. Clinical meeting held on 18-11-54 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) Clinical condition of vitreous by Prof. Karl Lindner. 4. Clinical meeting held on 19-11-54 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) Dysfunction of retina and optic nerve by Prof. Karl Lindner. 5. Clinical meeting held on 22-11-54 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) Squint by Prof. Karl Lindner. 6. Clinical meeting held on 25-11-54 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) Unilateral proptosis with a case report by Dr. P. N. Chaudhuri. (ii) Fundus picture of cyanosis retinae in a case of congenital heart disease (Fallot's tetralogy) by Dr. M. Sen Gupta. (iii) Pedigree of a case hereditary cataract by Dr. J. Bose. 7. Clinical meeting held on 27-1-55 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) Experience of his recent trip to China with special reference to ophthalmology by Dr. N. K. Munsi. (ii) A case of congenital idiopathic nystagmus with a peculiar hereditary trend by Dr. A. Basu. (iii) A case of bilateral essential atrophy of iris in a child by Dr. B. Mitra. (iv) Bilateral retinal detachment in a case of Marfan's syndrome by Dr. M. Sen Gupta and Dr. Sk. Md. Kamaluddin. 8. Clinical meeting held on 24-2-55 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) "Writing of a medical article"—a talk by Dr. S. N. Cooper. 9. Clinical meeting held on 31-3-55 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) Experiences of Bombay Conference by Members of the Society. (ii) Marfan's syndrome with a case report by Dr. B. K. Das Gupta. (iii) An unusual case of keratoconjunctivitis sicca by Dr. B. Mitra. 10. Clinical meeting held on 21-4-55 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) Problems of rural and urban ophthalmology by Dr. Mohanlal. 11. Clinical meeting held on 5-5-55 at the Eye Infirmary, Medical College Hospitals, Calcutta. (i) Glaucoma by Dr. R. G. Mackie. 12. Clinical meeting held on 26-5-55 at the M. N. Chatterjee Memorial Eye Hospital, Calcutta. (i) Scleromalacia perforans by Dr. B. N. Bhaduri and Dr. S. Bose. (ii) Doyne's honeycombed choroiditis by Dr. A. K. Sen. (iii) Essential atrophy of isis with a case report by Dr. A. K. Sen. (iv) Central areolar choroidal sclerosis by Dr. B. M. Chatterjee. (v) Sympathetic ophthalmia with a case report by Dr. J. Bose. 13. Clinical meeting held on 20-7-55 at the R. G. Kar Medical College Hospital, Calcutta. (i) Two cases of thyrotropic exophthalmos by Dr. K. D. Saha and Dr. S. N. Sen. (ii) Pedigree of a case of congenital coralliform cataract (five generations) by Dr. D. N. Guha. (iii) A case of bilateral exudative iridocyclitis with patchy dermal hypopigmentation and alopecia by Dr. J. Bose. (iv) A case of complete ophthalmoplegia with proptosis in the right eye with complete loss of vision in both eyes by Dr. N. K. Munsi and Dr. R. N. Bose. (v) A case of penetrating injury by Dr. J. Bose and Dr. H. Mukherjee. (vi) Lawrence-Moon-Biedl syndrome with demonstration of 2 cases by Dr. B. Mitra.

In all the above clinical meetings the members took keen interest in the discussion of scientific papers.

The Society had the honour in inviting Prof. Karl Lindner to dinner at the Great Eastern Hotel on 22-11-54 and had teas in honour of Dr. R. G. Mackie, Dr. S. N. Cooper and Dr. Mohanlal. It is hoped that in future the members would like to have an annual social dinner of the Society.

The Society had the honour of electing Prof. K. Lindner and Dr. K. Hruby of Vienna as honorary members.

The membership strength is now 89, an increase of 8 over the last year's roll. It is hoped that more young ophthalmologists will join the Society and increase its strength.

NOTES AND NEWS

Medical Education

The Committee on Medical Education of the World Medical Association continued its plans to hold the Second World Conference on Medical Education in the United States, probably in Chicago, in August 1959. Member associations have been requested to send the reports on their studies of the Proceedings of the First World Conference to the Committee for consideration in the plans for the Second Conference. The World Health Organization and the International Association of Universities have been invited to co-operate in sponsoring the Second Conference.

Dr. S. C. Sen and Sir A. L. Mudaliar, both of India, were designated as the official observers from W.M.A. to the forthcoming All India Conference on Medical Education which is being sponsored jointly by the Indian government, WHO and the Rockfeller Foundation.

In addition to planning for the Second World Conference on Medical Education, the Medical Education Committee has been asked to give consideration to (1) military medicine as a specialty; (2) implementation of an Educational Exchange Programme for doctors of the World; and (3) undergraduate teaching of Industrial Medicine.

Medical Ethics

The Council of the World Medical Association considered the direction from the General Assembly to reconsider whether or not the International Code of Medical Ethics required an additional chapter entitled "Duties of the Doctor to Society." The entire Council agreed that doctors have duties to society and that every doctor who abides by a Code of Medical Ethics fulfills these duties. The Members of Council who advocated the addition of a chapter or words which recognized the duties of doctors to society repeatedly pointed out that while all doctors who abided by a code of ethics also recognized and carried on their duties to society, certain lay groups criticize the medical profession in general, and The World Medical Association in particular, because the International Code does not specify duties of doctors to society, and therefore apparently these groups assume that the doctors do not recognize these duties.

The Council directed that the Committee on Medical Ethics reconsider the need for the additional chapter.

During the discussion at the 8th General Assembly of the ISSA Resolution on Medical Secrecy, which was disapproved by the delegates as being a violation of medical secrecy, several speakers suggested that W.M.A. might consider adopting some basic principles on this subject. The Committee on Medical Ethics studied this proposition. Its report to the Council suggested that no additional principles were needed as both the International Code of Medical Ethics and the Declaration of Geneva clearly indicated the role of the doctor in observing medical secrecy.

The World Medical Association
Secretary General's Tour in Australia

Dr. Louis H. Bauer, Secretary General of The World Medical Association has just completed a visit to the member association in Australia where he attended the 9th Australian Medical Congress and then went on to visit the Philippine Medical Association headquarters in Manila. Before the Australian Congress opened, Dr. Bauer visited the Auckland Branch of the British Medical Association of New Zealand in order to tell its Executive Committee about the aims and objectives of The World Medical Association.

Upon arrival in Australia Dr. Bauer visited the Victoria Branch of the Australian Medical Association in Melbourne and the South Australia Branch in Adelaide. He had the privilege of reporting to representatives of each branch association on the progress and future plans of The World Medical Association.

In addition to presenting the Sir Henry Simpson Newland Oration at the Congress, Dr. Bauer will receive the degree of Doctor of Science, honoris causa, from the University of Sydney (Australia) and present the Joseph Bancroft Oration before the Queensland Branch of the Australian Medical Association in Brisbane.

Change of Title for Royal Sanitary Institute, London

The Royal Sanitary Institute announces that in future it will be known as the Royal Society for the Promotion of Health. In announcing the change of title, it is pointed out that when the Institute was formed nearly 80 years ago, the meaning of "Sanitary" was "pertaining to health".

The Royal Sanitary Institute was founded in 1876 for the purpose of promoting the health of the people. It has over 12,500 members, and has branches in Australia, New Zealand and South Africa, and 20 overseas examination boards.

As part of its new developments in the field of preventive medicine, including dental health and health engineering, the Royal Society for the Promotion of Health recently announced that plans for the remodelling and modernising of its Museum of Health at a cost of several thousands of pounds is being drawn. It is anticipated that the new Museum, which will be completed in the Spring of 1956, will reflect the high standards of modern technique now expected in the field of technology.

Course in Applied Optics Urged

Mr. G. H. Giles, President of the International Optical Legue and Secretary of the British Optical Association, passed through Calcutta recently on his way to Australia and New Zealand.

Speaking at a reception held in his honour during his brief stay in the city, Mr. Giles, who had previously spent two days in Bombay, stressed the importance of a qualified eye service. He suggested that medical colleges in Calcutta and Bombay should introduce "Applied Optics" in their curriculum and that students should be given the opportunity to study refraction of the eyes in hospitals.

Bombay Medical Congress

The 13th Bombay Medical Congress will be held at the Taj Mahal Hotel on Sunday, 27th and Monday, 28th November 1955 under the Presidentship of Dr. Chamanlal M. Mehta and is scheduled to be inaugurated by Hon'ble Dr. Jivraj N. Mehta, Minister for Finance, Government of Bombay. A small exhibition will be held on this occasion.

India's First Urban Health Unit

India's first Urban Health Unit is expected to start working in Calcutta in November 1955. The scheme to set up the Unit has been sponsored jointly by the Government of India, UNICEF, WHO, the Government of West Bengal and the Corporation of Calcutta. The capital expenditure on the project is estimated at Rs. 15 lakhs and the recurring annual expenditure is expected to be about Rs. 8 lakhs. The project will be given shape with the signing of an agreement by the representatives of Calcutta Corporation and the Government of West Bengal and by the Secretary of the Union Health Minister, in New Delhi. The buildings for locating clinics, laboratories, offices and quarters for members of the staff are almost ready.

The Chetla area of Calcutta has been selected for the establishment of the Unit. About 68,000 persons or 13,000 families, the total population of the area, will benefit from the scheme. Model health and welfare services will be provided and special arrangements will be made for the care of industrial workers, expectant mothers, children, and V.D., T.B. and leprosy patients. An intense health education programme will also be undertaken. The Unit will also serve as a "demonstration centre" and "practice field" to the public health students under training in the All-India Institute of Hygiene and Public Health, Calcutta.

Primary Health Units in Community Blocks

Three hundred and seventy-five primary health centres have been set up by the Community Project Administration as part of its health programme with a view to ensuring adequate health services in areas covered under the community development programme.

The health programme of the administration mainly concentrates on preventive rather than curative measures.

Provision of safe water supply and hygienic disposal of human waste control of malaria and other communicable diseases like cholera, typhoid, plague, hookworm, provision of maternity and child health services, improved houses and health education, are some of the measures resorted to under this programme.

The programme also lays stress on problems like rural sanitation, prevention of usual diseases and epidemics, rural housing, personal hygiene, food and nutrition.

The primary centre is located in each block and forms the focus from which health services radiate into the area covered by the respective development blocks. It serves the rural population of about 66,000 spread over in about 100 villages. The centre is equipped with a dispensary, some diagnostic facilities and an indoor ward of about six beds.

A maternity and child welfare centre is attached to this centre. Three sub-centres are set up at convenient places in the block and a midwife is posted at each one of these centres so that her services are readily available.

Arrangements are also being made to supply mobile health vans which would facilitate the flow of health services into the different villages right to the homes of the people.

The staff attached to these health centres have also to conduct health surveys and collect useful statistics. These surveys consequently help in the implementation of preventive measures in the over-all health programme.

REVIEWS

Whys and Wherefores in Tuberculosis—By George Day, M.A., M.D. Published by the National Association for the Prevention of Tuberculosis (NAPT); Tavistock House North, Tavistock Square, London, W.C. 1, 1955. Price 3s. 6d.

This is a small (7¼"×5¼") booklet, produced under the auspices of NAPT, with a total of 44 pages of reading matter arranged under seven chapters. This is a very useful book, well worth the reading, especially to social and welfare workers in the field of tuberculosis, as well as to all who concern themselves with the many-sided problems of tuberculosis.

Primary Anatomy—By H. A. Cates, M.B., and J. V. Basmajian, M.D. Published by Bailliere, Tindall & Cox, 7 & 8, Henrietta Street, London, W.C. 2. Pp. xiv plus 340 with 44 line drawings and 4 plates. Third edition, 1955. Price 46s. 6d.

The first edition of the book appeared in 1948 and a thoroughly revised third edition in only 7 years' time is a good testimony of the reception it has had. The book is primarily meant for students in Physical and Health Education, Nursing, Physiotherapy, Occupational therapy and similar collegiate courses in human anatomy. As such a great deal of descriptive anatomy, as is found in text books for medical students, has not been incorporated. The whole subject matter has been dealt with in such a lucid and appealing style that the entire book has been a pleasant reading. A perusal of this book will greatly help the student, and teachers as well, in developing a better understanding and perspective about the basic background of human anatomy. The four plates depicting surface anatomy will prove very useful to the reader. The sketches and diagrams are clear and easily followed. This book should prove useful to those for whom it is intended.

Bone and Bones—By Joseph P. Weinmann, M.D. and Harry Sicher, M.D., D.SC. Second Edition, 1955. The C. V. Mosby Company, St. Louis, U.S.A. Board-bound in cloth, 10"×7", Pp. 508. Price $13.75.

This is a very interesting book written by the joint efforts of a pathologist and an anatomist, with working knowledge of each others field of work. Most of the basic work for the production of this book has been carried out in the Department of Research, Loyola University, School of Dentistry. The authors have intended the book to be a guide to those who work on bone and on bones in their medical speciality, e.g., orthopaedists, radiologists, metabolists, dentists and orthodontists, aiming to provide a common basis of discussion for the histologist, biochemist, pathologist and clinician.

The subject of discussion has been well-covered, though not very completely. Three hundred and two illustrations, well reproduced, greatly help the reader in following the details described in the text. A list of the references, arranged chapter by chapter, incorporated at the end of the book and covering 42 pages, is indicative of the mass of material sifted in producing the book, as well as guide to further reading. Paper, printing and general get-up of the book are very good. This book should prove to be of absorbing interest to all those for whom the authors have laboured hard.

The Medical Annual, 1955—Edited by Sir Henry Tidy, K.B.E., M.A., M.D., F.R.C.P. and R. Milnes Walker, M.S., F.R.C.S. Publishers John Wright & Sons Ltd., Bristol, England. Pp. xliv plus 31 (advt.) and 548 (text). Price 66s.

The present volume is the seventy-third consecutive issue of the well-known publication which has created for itself a rightly deserved place amongst the books to be read, and possessed by doctors throughout English-speaking countries of the world. In spite of the vast amount of literature appearing in the constantly enlarging scope and varieties of subjects which come under the purview of the doctor today, it is creditable that the editors, the contributors on different subjects and also the publishers have been able to keep this present Medical Annual within reasonable bounds, and similar to its predecessors. The abstracts have been well-selected, lucidly presented to the reader, helped by 58 figures and 63 plates in the 548 pages of the text. This present volume has amply maintained the tradition of its predecessors.

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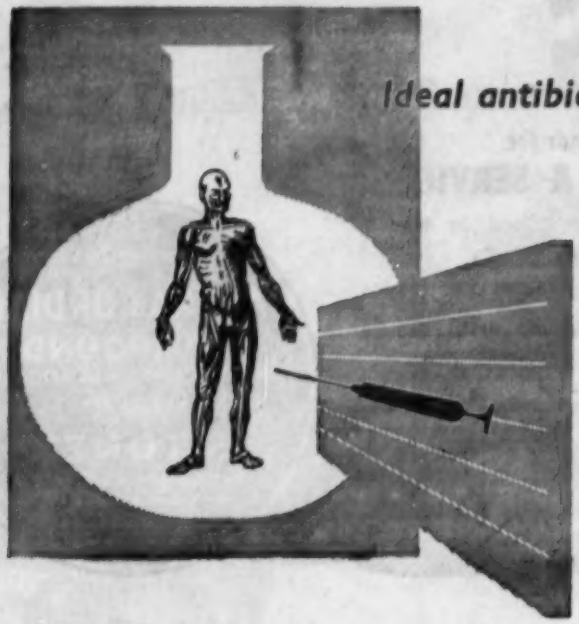

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